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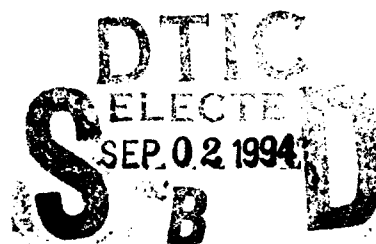
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NAVAL POSTGRADUATE SCHOOL
Monterey, California

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THESIS



**AN ANALYSIS OF THE RELATIONSHIP BETWEEN
OPERATIONS AND MAINTENANCE SUPPORT TO
MANPOWER AND MILITARY MANPOWER LEVELS**

by

Kenneth J. Panos

June, 1994

Thesis Advisor:

Richard D. Milligan

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OPERATIONS AND MAINTENANCE SUPPORT TO
MANPOWER AND MILITARY MANPOWER LEVELS**

by

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**Lieutenant Commander, United States Naval Reserve
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**Submitted in partial fulfillment
of the requirements for the degree of**

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June 1994

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ABSTRACT

The Operations and Maintenance (O&M) Appropriations of the military services provide resources for a wide variety of programs, including manpower support programs. It is assumed that some relationship exists between changes in manpower levels and O&M funding, often referred to as the O&M support "tail". This research examined the O&M, Navy and O&M, Marine Corps appropriations to identify programs which provide funding that supports the general active duty population of the Navy and Marine Corps. A framework to be used in calculating the O&M support "tail" that accompanies manpower adjustments was developed. It was determined that the O&M support "tail" was small and specific to certain manpower support programs. Many O&M manpower support costs will not change until force structure and infrastructure changes take place. It is concluded that O&M adjustments based on changes to manpower should be targeted only at specific programs whose costs vary with the manpower level. Otherwise, O&M reductions are essentially horizontal adjustments which have the potential to either under or overfund other O&M programs.

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I. INTRODUCTION

The era of declining defense budgets of the 1990's has brought new scrutiny to the Operations and Maintenance (O&M) Appropriations of the Military Services. Seen as the appropriation that maintains the readiness of forces to perform their mission, the O&M appropriation is the present focus of Congress, the Department of Defense (DoD) and the respective services (Morrison, 1992, p.1822). As outgoing Secretary of Defense Les Aspin noted in his 1994 annual report to the President and the Congress,

There is consensus among civilians and the military throughout DoD, members of Congress in both parties, and the public at large that force readiness should not falter. There is, however, another widespread consensus that will make achieving DoD readiness and sustainability goals most challenging...there is consensus that the United States should lower its defense spending and draw down its forces. In the past, however, as the United States drew its forces down, hollowness crept in. (p.29)

The task of budgetary decision makers is to avoid a return to the "hollow forces" of the 1970's by maintaining the readiness of the forces remaining in a smaller Department of Defense. At the same time, all involved in the budget process must look for increased efficiencies in the use of shrinking financial resources (Morrison, 1993, p.2244). The changed nature of the threat facing United States military forces, from the well known, well defined, Soviet block to an unknown,

unpredictable and multi-regional enemy, makes readiness paramount. (Aspin, 1994, p.29)

The O&M appropriations of the services are a large, amorphous collection of programs that fund a wide range of initiatives. For example, the Operations and Maintenance, Navy (O&M,N) appropriation provides resources for flight hours, steaming days, all levels of maintenance, logistics, training, recruiting, administrative and staff backup to the fleet, and the operating expenses of the various naval bases.

In the Fiscal Year (FY) 1995 budget submission for the Department of Defense, O&M comprises \$92.9 billion, nearly 37 percent, of the total Department request of \$252.2 billion. The dollar size of the O&M appropriation, combined with the relative immunity of this appropriation to the same level of decreases experienced in the investment appropriations in recent years, makes it an area of significant interest to all involved in the Department of Defense budget process. (Defense Budget Project, 1993, p.8)

The variety of items financed by the O&M appropriation gives rise to the concept of "tooth" and "tail" within the appropriation. The "tooth" represents the areas of the account which pay for combat operations, operational training, and maintenance while the "tail" is made up of the parts of the appropriation which provide support to the fighting forces. The current issue for the O&M appropriation is separating the "tooth" from the "tail", that is, cutting back the "tail"

without dulling the "tooth". (Defense Budget Project, 1993, p.3)

One of the chief ways that the Department of Defense has achieved the level of savings dictated by the constraints of the defense budget is through attrition and reductions in personnel. The means of accomplishing the required personnel cuts and the rate at which they have occurred have varied amongst the services but the end result is the same - reduced military manpower.

Because portions of the O&M appropriation fund the support of the individual military member, these reductions in military end strength have triggered reductions in the O&M appropriation. Decision makers reason that reduced manpower requires less O&M funding. Such reductions to the O&M appropriation have varied in their relationship to the level of end strength change from year to year and from service to service, seemingly without a guiding rationale.

The idea that there is an O&M "tail" associated with military manpower is given credence by reductions made to the FY 1994 O&M appropriations by the Congressional Appropriation Subcommittees on Defense. During the congressional review of the FY 1994 budget, when Navy begin strength projections were reduced below the number budgeted for, the O&M,N appropriation was cut 18 cents for every dollar cut from the Military Pay Appropriation. By comparison, the O&M, Air Force (O&M,AF) appropriation was cut \$6.62 for every dollar cut from Military

Pay due to understrength, while the Army's O&M appropriation (O&M,A) was untouched, despite a \$31.2 million cut in Military Pay attributed to understrength (U.S. Congress, Committee on Conference, Report on the Department of Defense Appropriations Bill for FY 1994, No.103-339, pp.58-59).

Understrengths in the services' end strengths at the end of FY 1992 however, were not accompanied by reductions in O&M funding clearly identified with the personnel understrength. (U.S. Congress, Committee on Conference, Report on the Department of Defense Appropriations Bill for FY 1993, No. 102-1015, pp.63-66).

Other applications employed by the Office of the Secretary of Defense (OSD) and the services, further indicative of an acknowledged relationship between military manpower levels and O&M funding, have taken the form of a "customary" \$2000 O&M cost per man or percentage adjustments to O&M in the same proportion as the change in military manpower.

A. OBJECTIVES

This research explores the interaction of the O&M appropriations of the Navy and the Marine Corps with changes in the military manpower levels of these naval services. The research will determine if it is possible and/or desirable to establish a framework to be utilized to produce a logical relationship between military manpower and O&M funding in support of manpower. In other words, this research will

attempt to define the personnel support "tail" provided by the O&M appropriation.

B. RESEARCH QUESTIONS

The primary question to be addressed by this research is:

- What is the logical relationship between changes in active duty manpower levels and adjustments to the O&M appropriation?

Related secondary research questions are as follows:

- What specific parts of the O&M appropriation relate to support of manpower, regardless of occupational or warfare specialty?
- What has been the recent historical relationship between changes in active duty manpower levels and adjustments to the O&M appropriation?
- How is that relationship being applied by the Congress and within the Department of Defense when making adjustments to the O&M appropriation resulting from manpower level changes?

C. SCOPE AND LIMITATIONS OF THE RESEARCH

This research is limited to the relationship between O&M appropriations of the active Navy and Marine Corps (O&M,N and O&M,MC) and active duty military manpower levels of the Navy and Marine Corps. This research is further limited to Activity Groups and Sub-activity Groups of the O&M appropriations that are related to manpower support. These segments are defined as those portions of the O&M appropriation that provide funding for a basic level of support for every sailor and marine and

are independent of the Navy personnel's rating or warfare specialty and the Marine's military operational specialty (MOS). Examples include O&M dollars which pay for subsistence in kind, which funds meals for enlisted personnel, and the Tuition Assistance program, which provides off duty educational benefits to active duty members.

Portions of the active O&M appropriation that pertain to ship and air operations as well as training for commissioned operational units, mobilization and the majority of logistics support areas are excluded from this research in order to isolate the parts of the O&M appropriation most directly associated with sustaining manpower. The areas of the O&M appropriation within the scope of this research lie predominantly in Budget Activities Three and Four, Training and Recruiting and Administrative and Servicewide Support, respectively. Medical support, which was removed from the O&M account in 1992, is not considered in this analysis.

This research focuses on the period from FY 1992 through the FY 1995 President's budget request. Beginning with the FY 1994 budget request, the format for reporting the breakdown of the O&M appropriation was changed. As a result of joint action between the congressional committees and the Department of Defense intended to provide better visibility to the purposes of specific portions of the O&M appropriation, the appropriation is now subdivided into four Budget Activities

and 15 Activity Groups (Discussion between the author and congressional committee professional staff member).

The four Budget Activities are: Operating Forces, Mobilization, Training and Recruiting, and Administration and Servicewide Support. Formerly, the O&M appropriation was divided into eight Budget Activities and over 100 Activity Groups (Naval Postgraduate School, 1993, pp.A-16,17). Budgetary data for the FY 1994 and FY 1995 requests were submitted in the new format. Since the FY 1994 request contains FY 1992 and FY 1993 data translated into the new format, the period FY 1992 through FY 1995 was chosen. Figures 1 and 2 show the new structure of the O&M,N and O&M,MC appropriations, respectively.

D. RELATED STUDIES AND METHODOLOGY

To date, studies in this area have centered on the interaction of the overall O&M appropriation with force structure changes. For the Navy, force structure is composed of hardware - ships, submarines, aircraft - and the personnel to man it. Force structure for the Marine Corps is manpower.

A Congressional Budget Office (CBO) study (Congressional Budget Office, 1988) utilized CBO's Defense Resource Model (DRM) and Capital Stock Model (CSM) to analyze operations and support costs of the Department of Defense. Operations and Support (O&S) costs are the sum of O&M and Military Personnel appropriations.

Budget Activity One (BA-1) - Operating Forces

Activity Groups:

- 1A Air Operations
- 1B Ship Operations
- 1C Combat Operations/Support
- 1D Weapons Support

Budget Activity Two (BA-2) - Mobilization

Activity Groups:

- 2A Ready Reserve and Prepositioning Forces
- 2B Activations/Inactivations
- 2C Mobilization Preparedness

Budget Activity Three (BA-3) - Training and Recruiting

Activity Groups:

- 3A Accession Training
- 3B Basic Skills and Advanced Training
- 3C Recruiting and Other Training and Education

Budget Activity Four (BA-4) - Administration and Servicewide Support

Activity Groups:

- 4A Servicewide Support
- 4B Logistics Operations and Technical Support
- 4C Investigations and Security Programs
- 4D Support of Other Nations

Figure 1. Structure of the O&M,N Appropriation. Source: NAVCOMPT.

Budget Activity One (BA-1) - Operating Forces

Activity Groups:

- 1A Expeditionary Forces
- 1B USMC Prepositioning

Budget Activity Three (BA-3) - Training and Recruiting

Activity Groups:

- 3A Accession Training
- 3B Basic Skills and Advanced Training
- 3C Recruiting and Other Training and Education

Budget Activity Four (BA-4) - Administration and Servicewide Support

- 4A Servicewide Support

Figure 2. Structure of the O&M,MC Appropriation. Source: NAVCOMPT.

The Fiscal Requirements Model was developed by the Center for Naval Analyses (Eskew and Perez) in 1986 to estimate the costs of the 600 ship Navy. It was updated in 1989 and again in 1993. The model estimates future resources needed in each of the various appropriations to achieve a particular force structure. The O&M appropriation portion of the model uses three main areas - ships, aircraft and shore establishment costs - to project requirements.

Examining the relationship of O&M,N levels to force structure, Vento (1992) established O&M cost relationships for two main categories of force structure: mission, which is comprised of subcategories titled ships, aircraft, submarines, strategic, and other; and infrastructure. Utilizing the infrastructure breakdown designed by the Institute for Defense Analysis (IDA) in 1992, Vento related changes in O&M Total Obligational Authority (TOA) to both unit changes in force structure, where the unit is defined as the DD-963 class ship, and unit changes in end strength, where each unit is one person, for each of the eight infrastructure subcategories.

The methodology to be employed in this research entails an in depth study of the O&M,N and O&M,MC appropriations. Utilizing the Department of the Navy Budget Estimates/Justification of Estimates submitted to the Congress (also known as Exhibit OP-05), the O&M appropriations will be disaggregated into their specific Budget Activities (BAs), Activity Groups (AGs) and Sub-Activity groups (SAGs) in order

to identify the funding lines that provide support to the generic sailor or marine.

Once the O&M appropriation is broken into its components, a rate per unit of manpower will be established for each program identified as providing support to active duty Navy and Marine Corps manpower. Summing the rates across all identified programs will result in an overall O&M rate per unit of manpower for the Navy and Marine Corps in each of the fiscal years, 1992 - 1995. From these calculations, the relationship between manpower and funding in the O&M appropriations for programs that provide this generic support will be analyzed. Unless otherwise indicated, all dollar amounts used in this study are nominal, or "then year" dollars.

In gathering data for this research the author travelled to Washington, D.C. and met with staff members in the legislative branch and numerous officials within the Department of Defense. Through these meetings additional contacts were generated with whom discussions were later held via telephone. Given that these meetings and telephone conversations were not formal interviews and more in the nature of fact finding, information gathered from these sources is cited by general reference to the discussion and the person's position.

E. ORGANIZATION OF THE THESIS

Chapter II will provide the background and context for the research including detail of the assumed relationship between O&M and manpower levels and its effect on the FY 1994 Department of Defense budget. A comparison of the impact on Department of the Navy, Army and Air Force budgets resulting from this relationship will be made. Chapter III will review other relevant studies of the O&M appropriation and outline the methodology and format for the research. Chapter IV will report the results of the examination of the O&M,N and O&M,MC appropriations and explain calculations for determining the O&M "tail". Chapter V will propose a framework to be used to make adjustments to the O&M, appropriations resulting from manpower adjustments and analyze the interaction between military manpower levels and selected manpower support programs of the O&M,N and O&M,MC appropriations. Chapter VI will draw conclusions and provide a recommendation for use of the results. Recommendations for follow on studies of the O&M appropriation will also be discussed.

II. BACKGROUND

A. THE O&M BUDGET ENVIRONMENT

The FY 1995 Defense Budget request submitted by the President calls for a 5.3 percent reduction in active duty military end strength while asking for a 3.7 percent real increase in O&M funding (Congressional Research Service, Table VI). This trend is a continuation of similar circumstances in FY 1994 when active duty end strength was decreased by 5.5 percent and O&M levels increased by 1 percent in real terms (Defense Budget Project, p.9).

This pattern of personnel strengths decreasing and O&M budgets increasing has raised concerns within the Congress. Despite the agreed upon need to maintain readiness levels, there exists a common belief that a reduction in manpower equates to a reduction in O&M funding, or the O&M "tail". These concerns have resulted in the Navy having to answer questions from the House Defense Appropriations Subcommittee explaining why O&M requirements are going up while end strengths are coming down (Navy Office of Legislative Affairs, 1994).

While it is logical that areas of the O&M appropriation should be adjusted in direct relation to changes in manpower levels, there is also recognition - despite the concerns noted

above - that particular areas of the O&M appropriation need to be increased regardless of the present reductions to manpower.

1. Global Considerations Affecting O&M Funding

There are several reasons for the inverse relationship between manpower levels and the overall O&M funding level, the most significant of which is that instability in various regions of the world has not allowed the operational requirements (OPTEMPO) of our Armed Forces to be reduced commensurate with the force level reductions taking place. In short, the remaining forces are being asked to handle the commitments of the larger force that preceded it (Morrison, 1993, p.2244).

In FY 1994, recognizing the impact of OPTEMPO on decreased end strength for the Marine Corps, the Senate Armed Services Committee recommended, and the Appropriations Committees funded, an increase to the Marine Corps end strength ceiling from 174,100 to 177,000 (U.S. Senate, Committee on Appropriations, Report on the Defense Appropriations Bill, FY 1994, No.103-153, p.12). Although the Marine Corps is authorized an end strength of 177,000 the Department of Defense Bottom Up Review, completed in late summer 1993, recommended a Marine Corps end strength of 174,000 (Discussion between the author and Navy budget official). This action makes the Marine Corps the only service whose planned end strength stays level (at 174,000) from FY

1994 through the Future Years Defense Program (FYDP). The Army, Navy and Air Force all face continued decreases in end strength for the foreseeable future as shown in the following figure.

	1994	1995	1996	1997	1998	1999
Army	540	510	500	495	495	495
Navy	472	442	426	408	398	394
Marine	174	174	174	174	174	174
Air Force	426	400	396	392	391	390

Figure 3. Projected DoD Manpower Levels by Service 1994-1999 (thousands). Source: Congressional Budget Office Memorandum, 1994, p.10.

2. Domestic Factors Affecting O&M Funding

a. Transfers into the O&M Appropriation

Another reason the funding level of the O&M appropriation is increasing is the addition of programs to the scope of the O&M appropriation. Examples are the cost of buying major spare parts, transferred into the O&M appropriation from the procurement appropriations, and expenses incurred from economic aid payments to communities where bases are in the process of closing (CBO Paper, March 1994, p.38).

b. Quality of Life

Quality of life (QOL) programs have assumed added importance in all of the services as morale issues have

received renewed recognition as a factor of readiness (Defense Budget Project, 1993, p.11). This is especially so in the Navy and Marine Corps as the Department of the Navy attempts to achieve parity with the other services in Morale, Welfare and Recreation (MWR) spending and Bachelor's Quarters (BQ) standards of living (Discussion between the author and Navy budget official).

c. Recruiting

Since 1989, the military services' recruiting budgets have decreased by 60 percent and advertising budgets have decreased by 40 percent (Morrison, 1993, p.2244). While many people have equated a decrease in personnel levels with decreased recruiting budget requirements, recent experience indicates a need to spend more. Additional spending for recruiting, which includes advertising, is being dictated by the need to counter the public perception that the military is not hiring and that the military no longer provides a secure career.

Also of significance in recruiting quality personnel for the smaller force of the future is recent data indicating a drop in the number of men in the target age group who are willing to enter military service. The Office of the Secretary of Defense's Youth Attitude Tracking Survey indicates a decline in those willing to enter the military from 12.5 percent in 1989 to 9.8 percent in 1992. Additional

data shows future potential decreases in the percentage of high school graduates entering the military and potential increases in the percentage of recruits in the lowest mental group, up from 0 percent now, as a result of underfunding recruiting and advertising. (Commander, Navy Recruiting Command, 1993). These statistics are particularly alarming as the technology levels of weapons and equipment continue to increase.

Congress has recognized the significance of the problems facing the military in recruiting quality personnel and in FY 1994 increased the requested recruiting and advertising budgets of the Army, Navy and Marine Corps by \$16.4 million. The Navy share of this increased recruiting budget was \$10 million and the Marine Corps share was \$2.3 million (U.S. Senate, Committee on Appropriations, Report on the Defense Appropriations Bill, FY 1994, No. 103-153, p.37).

B. IMPACT OF THE PROBLEM

Congressional appropriators made additional reductions totalling \$36.9 million to FY 1994 O&M,N because the Navy was below its estimated end strength by approximately 16,450 at the end of FY 1993 (Discussion between the author and Navy budget official). Applying the \$36.9 million reduction to the 16,450 understrength (8225 manyears) implies a \$4486 O&M "tail" to each manyear. To put this understrength in perspective, 16,450 is approximately 3.1 percent of the Navy's

planned end strength level at the close of FY 1993. The understrength means, for a base population of 1,000 active duty personnel, there are 31 less personnel on board on the last day of FY 1994.

The following quotation provides some idea of the intent of the Senate Defense Appropriations Subcommittee in making this cut:

Both the Navy and Air Force are expected to begin fiscal year 1994 with military personnel levels lower than planned in the President's request. Thus, the Committee reduces funding for base support, transportation, and other O&M programs directly affected by these military personnel changes without jeopardizing support of or quality-of-life of soldiers. (U.S. Senate, Committee on Appropriations, Report on the Department of Defense Appropriations Bill, 1994, No. 103-153, p.41)

The lack of specific identification of O&M Activity Groups and Sub-Activity groups that provide resources for support of active duty personnel has resulted in reductions by Congress being applied predominantly to the Base Support Activity Group within each of the four Budget Activities. These understrength reductions are associated with manpower support, yet the allocation of reductions primarily to the Base Support Sub-Activity Groups carries the assumption that the majority of the support costs associated with personnel who left the service were being paid by the bases on which they served. Because the reductions are taken from Base Support they actually have a better chance of adversely affecting the remaining sailors, a result not intended by the Congress.

Within the Base Support Activity Group are issues that directly affect quality of life. Funds for the appropriated portion of Morale, Welfare and Recreation, Bachelor Quarters and Maintenance of Real Property (MRP) are resourced within the Base Support activity group.

\$26.9 million of the \$36.9 million FY 1994 understrength reduction to the O&M,N appropriation was taken in the Base Support Activity Groups of the various Budget Activities. The remainder of the reduction, \$10 million, was taken from the Administration, Military Manpower and Personnel Support, Other Personnel Support, and Servicewide Communications Sub-Activity Groups of Budget Activity Four (U.S. Congress, Committee on Conference, Report on the FY 1994 Defense Appropriations Bill, No. 103-339, pp.57-59).

These kinds of reductions to the Base Support Sub-Activity groups are more in the form of horizontal reductions than the vertical reductions being emphasized by the Department of Defense leadership and the Defense Base Closure and Realignment Commission. While reductions to Base Support believed to be commensurate with reductions in active duty manpower have been made, there is a point beyond which Base Support can no longer absorb cuts in the O&M appropriation. Because of the fixed costs of operating a military base, active duty personnel reductions affect required levels of base support funding less when taken horizontally than if entire units are decommissioned or consolidated by mission

area and bases closed as a result. (Defense Budget Project, 1993, p.15)

C. COMPARISON OF THE EFFECT ON THE MILITARY SERVICES

The Army, Navy and Air Force ended FY 1993 with manpower strengths less than estimated. Yet the reductions to the O&M appropriations made during the congressional review process were applied to the respective services in very different ways, implying a different level of O&M support for manpower across the services.

The Air Force had the smallest reduction, \$2 million, in its Military Personnel appropriation; however, the O&M, Air Force (O&M,AF) appropriation was reduced at the greatest rate, \$6.62 of O&M dollars for every dollar in Military Personnel. The O&M, Army (O&M,A) appropriation was not cut at all despite a \$31.2 million reduction in its Military Personnel appropriation due to the understrength. The Navy, despite having the largest reduction to its Military Personnel appropriation because of the understrength (\$205 million), was reduced \$36.9 million in O&M,N, a rate of 18 cents of O&M,N for every dollar of Military Pay cut.

D. MARINE CORPS VIEW OF THE ISSUE

A Marine Corps reclama to a proposed reduction (mark) by the Comptroller of the Navy (NAVCOMPT) during the Department of the Navy FY 1995 budget review provides some insight as to

how the Office of the Secretary of Defense (OSD), NAVCOMPT, and the Marine Corps view the issue of operational O&M support to manpower.

In increasing the Marine Corps end strength up to 177,000, beginning in FY 1994, the NAVCOMPT mark issued against the O&M,MC budget request applied a rate of \$2,000 support funding per manyear. Previously, reductions to Marine Corps end strength and O&M,MC by OSD in FY 1992 applied a rate ranging from \$5059 to \$12,462, across the FYDP. The Marine Corps reclama indicated it used a rate of \$3,000 (in FY 1990 dollars) in O&M,MC support per manyear. The \$3,000 is comprised of: \$1,313 in Fleet Marine Force support costs, which is operational unit support to the marine; \$1,578 in base support costs; and, \$109 in base communications support costs. A recent discussion with a Marine Corps budget official indicated that these O&M,MC support costs for FY 1995 are projected to be approximately \$3530 per marine.

E. NAVY VIEW OF THE ISSUE

The Marine Corps and the Army view O&M funding in per man terms. The Navy, however, has not made a direct correlation between O&M funding and military manpower because it sees its force structure in ships, submarines and aircraft. Instead, the Navy has chosen to look at programs supported by O&M funding and look for management efficiencies in those programs.

These efficiencies are not necessarily connected to active military manpower levels. Because the commands responsible for operating a particular program do not have an incentive to be completely forthright about how and where savings in their program might be achieved, in some cases, the Navy has made reductions to programs to "force efficiencies" from its field activities (Discussion between the author and Navy programming official).

Adjustments to the O&M,N and O&M,MC appropriations resulting from changes to active duty manpower levels should be targeted at those programs funded within the O&M appropriation that most affect manpower support. Action along these lines would provide confidence to the Congress that the Navy and Marine Corps are keeping O&M funding "in step" with the personnel levels of the Naval service and preserve the level of funding in the budget activities seen to have the most direct impact on readiness.

III. LITERATURE REVIEW AND METHODOLOGY

A. LITERATURE REVIEW

The literature review conducted to support this research falls into two broad categories:

1. Relevant articles published in professional journals; reports accompanying the congressional defense appropriations bills; reports published by government support agencies such as the Congressional Budget Office and the Congressional Research Service; reports published by independent research agencies.
2. Research studies conducted for the purpose of modeling, investigating and understanding the behavior and interaction of the Operations and Maintenance appropriations in the budget process.

1. Key Reports and Journal Articles

Maintaining the level of military readiness that accompanied the defense build up of the 1980's while significantly decreasing the size of the military is the most critical issue facing the Department of Defense during the 1990's. This issue has some similarity to the scenario faced by the military following the Viet Nam War in the early 1970's which resulted in what has been called the "hollow force" - a large force structure in terms of equipment and personnel where neither was capable of performing its mission at the expected level. (Aspin, 1993, pp.2,4)

Because of similarities to the post Viet Nam period and the desire of the nation to learn from its mistakes of the past, maintaining military readiness has been a topic of interest for independent research concerns that specialize in defense matters and the media that reports on government and the defense establishment.

a. Congressional Committee Reports

The reports of the House, Senate and Conference Committees accompanying the Department of Defense Appropriations Bills in FY 1993 and FY 1994 were used in this research. During the congressional budget review of the FY 1994 President's budget request, additional reductions were made to the O&M appropriations due to "personnel understrength" in the services. A discussion of this O&M "tail" - reductions in O&M resulting from the services finishing the previous fiscal year below forecast endstrength - is provided in the written report on the overall Department of Defense O&M appropriation in the FY 1994 Senate Appropriations Committee report (p.41). That discussion provided the impetus for this research.

The congressional committee reports also provided the macro view of the overall Department of Defense and individual services' O&M appropriations and, in the section of the reports dealing with the Military Personnel

appropriations, the dollar amounts of the personnel understrengths of the respective services.

b. Defense Budget Project Report

The Defense Budget Project's report, "Averting a Return to Hollow Forces: Readiness and the Operations and Maintenance Budget", issued June 7, 1993, and two articles by David C. Morrison appearing in the *National Journal* ("Smooth Operators", August 8, 1992, and "Ringing Hollow", September 18, 1993), frame the broader issue of the O&M appropriation's relationship to readiness, of which this research is a subset.

The Defense Budget Project (DBP) report provides details of the context in which the current debate about the defense budget and the readiness of our military forces is taking place. The report takes a Department of Defense-wide perspective and discusses the role of the overall Department of Defense O&M appropriation in maintaining readiness. It outlines the structure of the O&M appropriation and relative levels of funding within the four Budget Activities comprising this appropriation. The report also describes how the funding levels of the appropriation compare to other military appropriations such as procurement and Research, Development, Test and Evaluation (RDT&E), together referred to as the investment accounts. (p.8)

A key point made in the report is the lack of political support for the O&M appropriation. Because of the

variety of programs supported by O&M and its high outlay rate, the O&M account is a prime target for defense budget cuts.¹ By comparison, the other military appropriations - personnel, procurement, RDT&E, and military construction - by their nature have support from industry, business, special interest groups and congressional members' constituents (p.14).

The DBP report concludes that the FY 1994 Department of Defense O&M appropriation adequately funds the present force structure at the desired level of readiness. DBP notes that future increases in the O&M appropriation may be caused by higher costs to maintain new weapons systems and initiatives to retain high caliber military personnel through improvements to their quality of life. In order to meet budget reduction requirements, targeted cuts to the O&M appropriation which decrease readiness in some areas may be necessary to maintain readiness in more critical areas. Finally, the report observes that the relationship between O&M funding and readiness must be carefully tracked to ensure the military forces do not become "hollow" (p.17).

c. Articles

The articles by Morrison in the *National Journal* point out that the O&M appropriation is viewed by some in

¹ The outlay rate is the percentage of the appropriation that is actually dispersed from the Treasury per year. A high percentage of O&M (approximately 77 percent of O&M,N in FY 1994) will be paid out in the first year of the five year expenditure availability period.

Congress as a sort of "fiscal black hole" that should be examined closely when considering areas in which to cut the defense budget. The articles point out the debate among members of Congress and between the DoD leadership and the congressional committees as to how much of the O&M appropriation actually provides the readiness they are concerned about preserving and how much of the O&M funding is providing overhead that should be reduced as the military downsizes.

It is ironic that in the first of these articles in 1992, Representative Les Aspin, then Chairman of the House Armed Services Committee, is the leader of a move to cut the non-readiness producing portions of the O&M appropriation. He was at the center of the side in the Congress looking to the O&M appropriation as the source of significant savings in the defense budget. By the time the second of the two articles was published in 1993, Mr. Aspin had become the Secretary of Defense, charged with defending the defense budget and maintaining the readiness of the military via the O&M appropriation.

Morrison provides some of the detail of the efforts of Senator John McCain of the Senate Armed Services Committee and his colleagues to bring the issue of force readiness and O&M funding to the center of debate. McCain is leading the initiative in the Senate to prevent O&M cuts from creating a return of the "hollow force".

In his 1993 report compiling the responses of the service Chiefs to his questions concerning the readiness of the services, Senator McCain states,

The data provided by the Chiefs...show that both the Executive Branch and the Congress are to blame. They show that the Administration is to blame for underfunding some aspects of readiness at the expense of others, and that the Congress is to blame for using readiness for pork and special interest projects. (McCain, 1993, Tab A, p.1)

Morrison's articles cover some of the same ground as the Defense Budget Project report and cite the report and its conclusion that O&M is adequately funded and that careful reductions to O&M can be made without degrading readiness.

2. Research Reports

In Chapter I, mention was made of related studies in the area of O&M funding. The following is a brief summary of the central methodologies and findings of those studies.

a. Congressional Budget Office Study

In its 1988 study, *Operation and Support Costs for the Department of Defense*, the Congressional Budget Office (CBO) utilizes two models to determine future Operations and Support (O&S) costs on a Department of Defense-wide level. As stated earlier, Operations and Support costs are the sum of O&M and Military Pay (MP) funding. Major changes in the world have occurred since the date of the CBO study, changes which have caused significant reductions in the size of the military. Because of these changes the specific findings of this CBO study are not applicable to the future funding of

O&S. The models used in the study, however, are examples of methodologies available which can be used to estimate O&S funding requirements at the macro level. The two models utilized are the Defense Resources Model (DRM) and the Capital Stock Model (CSM).

The DRM utilizes what CBO terms the major force structure of the Department of Defense to forecast the level of O&S funding required in the future years being evaluated. Major forces are defined as Army divisions, Navy ships, and Air Force and Navy combat air wings. (pp. x-xi).

The CSM assumes that changes in O&S costs are driven by changes in the value of the capital stock of the Department of Defense. The concept underlying this assumption is that as the value of the capital stock increases, the O&S costs will also increase because the higher cost weapons systems will be more expensive to operate and maintain. While definitions of capital stock vary, CBO used "major weapons" - ships, airplanes and tanks - to value the Department of Defense capital stock. While the 1988 study cites limitations in the CSM, it does report that there was significant evidence gathered between 1975 and 1987 that O&S costs have varied positively with the value of the capital stock (p.50).

b. The Revised Fiscal Requirements Model

Henry Eskew and Arnold Perez of the Center for Naval Analyses developed the Fiscal Requirements Model for the

purpose of projecting funding requirements in each of the Navy appropriations, including O&M,N, beyond the period of the FYDP. The original model was created as a planning tool in 1986 in the context of the Navy "assessing the affordability" of its plans to build up to a 600 ship force. The model was subsequently updated in August 1993. In general, the model is not designed to reach the level of detail necessary for budgeting or programming. (pp.1-3).

c. O&S Spending and Force Size: A Relationship Analysis

In his thesis, Robert Vento investigated the relationship between Navy O&S spending and force size, utilizing O&M,N spending as the surrogate for O&S spending and two measures of force size: force structure and personnel end strengths. Vento grouped Navy missions into five areas and examined the relationship of O&M,N spending to the size of the force structure in each of these mission areas. He also examined the relationship between O&M,N spending and force structure size as it applied to the Navy infrastructure.

Infrastructure was decomposed into eight sub-categories, presented by IDA in 1992. The sub-categories include Administration, Communication, Logistics, Medical, Training, Personnel, Force Management, and Installation Support. Vento then evaluated O&M,N for each of the infrastructure sub-categories as a function of both a standard

measure of force structure, the DD-963 class ship, and personnel end strength.

Findings from Vento's study were that both force structure and personnel end strength levels were good indicators of O&M,N spending in five of the eight infrastructure sub-categories. Of the two measures of force size, force structure was a better indicator of O&M,N spending. Neither measure of force size was found to be a credible indicator of O&M,N spending in the Communications and Force Management sub-categories. No conclusions were able to be drawn about the Installation Support category due to uncorrectable data interrelationships over the years he studied (pp.76-81).

3. Contribution of This Research to the Issue of O&M Funding

Most of the literature reviewed for this research shared the common perspective of the overall O&M appropriation, either at the Department of Defense or the Navy level. Where it did not, the perspective was from within the O&M,N appropriation at the major mission and infrastructure levels. These articles and reports provide the backdrop for this research which will examine one unique area of the many O&M issues that are being debated within the Department of Defense and the military services.

Focusing on the common manpower support provided by the O&M appropriation, this research reaches across the many warfare specialties and military occupational specialties of the Department of the Navy. It provides a baseline of the O&M support "tail" for budgetary decisions related to changes in the levels of military manpower of both the Navy and Marine Corps.

B. METHODOLOGY

1. Information and Data Gathering

Central to the gathering of data for this research was travel to Washington, D.C. The primary agency providing information supporting this thesis was the Office of the Comptroller of the Navy (NAVCOMPT). The division within NAVCOMPT that deals with O&M appropriations for the Navy and Marine Corps is the Operations Division (NCB-1). Within the Operations Division, the Control and Coordination Branch (NCB-11) is responsible for the formulation and execution of the Department of the Navy O&M budget.

During meetings with the various budget analysts within NCB-11 responsible for portions of the O&M appropriation, the author was able to gain an understanding of the structure of the O&M appropriation. Copies of the Department of the Navy Budget Estimates/Justification of Estimates for the President's O&M and Military Pay Budget submissions to the Congress for FY 1994 and FY 1995 as well as

other budgetary exhibits were made available. The Budget Estimates/Justification of Estimates documents for the O&M appropriations of the Navy and Marine Corps, Exhibit OP-05, commonly referred to as the "OP-05", are the primary source of O&M appropriation detail for this research.

While in Washington, meetings with a professional staff member of the Senate Appropriations Defense Subcommittee and staff members in the National Security Division of the Congressional Budget Office were enlightening as to both general and specific issues concerning the O&M appropriation and modeling done in the field of Department of Defense O&S costs, respectively.

Since a majority of the programs identified within the O&M,N appropriation that provide resources to support the generic sailor are centrally managed at the headquarters level by the Deputy Chief of Naval Operations for Personnel (N-1), meetings were held with staff officers within the N-1 organization responsible for some of the selected programs.

These meetings around Washington did not consist of formal interviews but were discussions about the O&M appropriations in general and specific programs within the O&M appropriation. The meetings invariably spawned names and telephone numbers of others knowledgeable about or involved in funding the O&M appropriations. Whether in person or via telephone, the common questions asked of many of the contacts were, "Is there an adjustment made to O&M as a result of

adjustments to manpower levels? If so, what is the adjustment based on?". The answers to these questions varied and provided some of the background information presented in Chapters I and II.

2. Understanding the Data

As mentioned, the Exhibit OP-05 is the primary source of information and budgetary data for this thesis. There is a separate exhibit for the O&M,N and the O&M,MC appropriation each fiscal year. The Exhibit OP-05 is divided into the four budget activities discussed in Chapter I. The section of the exhibit for each of the budget activities has four main subsections: I. Description of Operations Financed, a narrative description of the programs funded in this activity group; II. Force Structure Summary, a narrative description of the force structure supported by this activity group; III. Financial Summary, a detailed description of the incremental changes to the funding in a particular Activity Group from the previous fiscal year President's Budget Request to arrive at the present fiscal year President's Budget Request; and IV. Performance Criteria, predominantly non-dollar numerical data providing the level of operations, in units, that must be supported by this Activity Group. Appendix A is a sample of the Exhibit OP-05 for a Budget Activity 4, Activity Group.

Section I of the Exhibit OP-05 for each of the Budget Activities and Activity Groups within the O&M,N and O&M,MC was

examined to determine the programs resourced in that Activity Group. The criterion applied to the many programs detailed in this section of the Exhibits required that a program must provide funding to support the generic sailor or marine, independent of warfare specialty, rating or military occupational specialty, to be considered a component of the "tail". This method was used to disaggregate the Activity Group into Sub-Activity Groups and programs - a level within the Sub-Activity group - meeting the criterion just outlined.

The Exhibit OP-05 contains funding levels for each of three fiscal years. Funding is shown as follows: the President's Budget Request for the coming fiscal year; the "Current Estimate" of the present fiscal year's execution and the present year's "Appropriated" and "Budget Request" amounts; and the "Actual" execution of the previous fiscal year. See Appendix A for an example.

The Exhibit OP-05's for the FY 1994 and FY 1995 President's Budget Requests were used to obtain the actual execution amounts in FY 1992 and FY 1993, the estimated execution amounts for FY 1994 and the requested amount for 1995.

Since no Sub-Activity Group as a whole met the definition to be included in this analysis but programs within the Sub-Activity did, Section IV of the Exhibit OP-05, Performance Criteria, in some cases, provided the necessary financial data for the analysis. Examples of programs where

this held true are Subsistence-in-Kind (SIK) for both the Navy and Marine Corps and Off Duty Education for the Marine Corps. When the performance criteria did not include budgetary data at a sufficient level of detail for analysis, individual NAVCOMPT budget analysts or other sources responsible for program funding - the resource sponsor or major claimant - such as the Deputy Chief of Naval Operations for Personnel (N-1) and Headquarters Marine Corps, provided the funding data for that particular program for the FY 1992 - FY 1995 period.

Manpower estimates fall into two categories, end strength and manyears. End strength is simply the number of personnel in the service as of a certain point in time, usually the end of the fiscal year. Manyears, also called workyears, is the average of begin strength - the level of personnel in a service at the beginning of the fiscal year - and end strength. Manyears is a more accurate way to determine funding requirements because manyears account for a gradual change in the number of personnel on board during the course of the fiscal year rather than assuming the number of personnel drops from begin strength to end strength on the first or last day of the fiscal year.

Manpower figures used in the analysis were taken from either the Exhibit OP-05 Performance Criteria when available or the Department of the Navy Budget Estimates/Justification of Estimates for the Military Personnel, Navy and Marine Corps appropriations, President's Budget Request, FY 1994 and FY

1995. Unless otherwise indicated, manpower figures used in the analysis are in manyears.

3. Method of Analysis

Once the Sub-Activity Groups and programs supporting collective manpower of the Navy or Marine Corps were identified, the amount of funding in each program over the FY 1992 - FY 1995 time period was determined.

In general, the dollar amount in a particular program was then divided by participating manyears to calculate program funding per manyear. In the case of Off-Duty Education programs and the Veterans Educational Assistance Program (VEAP), funding was divided by either participants or end strength, as available. This calculation was made for each program in each of the years being studied.

This participating manyear rate was then adjusted for the percentage of the population that benefits from or participates in the program. The percentage of the population participating was derived by dividing the participating manyears by the total manyears - officer or enlisted - eligible for the program. Participants or end strength were used as the denominator for this calculation when participating manyears were not available.

Summing the adjusted manyear rates for all of the programs identified resulted in a total O&M support rate per manyear. The various programs determined to be generically

supportive of Navy and Marine Corps personnel together comprise the set of programs that define the O&M "tail". Separate rates for Navy officers and enlisted and Marine Corps officers and enlisted were derived.

The overall O&M adjustment resulting from a manpower change was then calculated by multiplying the appropriate manyear rate by the size of the manyear change. When the officer and enlisted mix in a manpower change is unspecified, the manpower change must be broken into separate amounts of enlisted and officer manyears. This is accomplished by multiplying the manpower change by the percentage of enlisted manyears in total manyears in that year.

Lastly, trend analysis was conducted comparing percentage changes in the funding levels of the programs across fiscal years 1992-1995 with percentage changes in manpower figures over the same time period.

IV. DEFINING THE O&M SUPPORT TAIL

A. DISAGGREGATING THE APPROPRIATIONS

As stated in Chapter III, the O&M appropriations of both the Navy and Marine Corps were examined to identify Budget Activities, Activity Groups and Sub-Activity Groups that provide general personnel support funding to every sailor, marine and officer. The term generic was used to describe active duty military personnel without regard to their rank, warfare or occupational specialty.

In applying this criterion to the four Budget Activities of the O&M,N appropriation, it was determined that Budget Activities One and Two, Operating Forces and Mobilization, had no Activity Groups or Sub-Activity Groups that provided general personnel support, with the exception of their respective Base Support Sub-Activity Groups.

Budget Activity One, Operating Forces, as the title implies, is comprised of Activity Groups and Sub-Activity Groups that provide funding for fleet operations, training and maintenance. The vast majority of funding in this Budget Activity is driven by specific platforms and unit training exercises and provides no personnel support to the average sailor.

However, the Operational Forces Sub-Activity Group within the Expeditionary Forces Activity Group in Budget Activity One of the O&M,MC appropriation contains one program providing general manpower support. The Fleet Marine Force (FMF) Support program provides resources for the individual marine's "782 gear". Included in this equipment is the marine's helmet, pack, flack jacket and similar personal equipment (Discussion between the author and Marine Corps budget officials).

The remainder of the Expeditionary Forces Activity Group, as well as the USMC Prepositioning Activity Group in Budget Activity One, provide funding for programs that are driven by operational and unit training requirements and the operation of the prepositioning program, respectively. The costs of these programs cannot be attributed to individual manpower support.

O&M,N Budget Activity Two, Mobilization, includes funding for ship and aircraft activations and deactivations, prepositioning units and Fleet Hospitals and provides no support for personnel other than in its Base Support Sub-Activity Group. The O&M,MC appropriation has no Budget Activity Two.

Focusing on Budget Activities Three and Four, Training and Recruiting and Administrative and Servicewide Support, a preliminary list of Activity Groups, Sub-Activity Groups and programs that would potentially provide general personnel support funding was developed. Budget Activity Three in the

O&M,MC appropriation is essentially identical to the Navy Budget Activity Three. Figures 4 and 5 are an expansion of portions of Figures 1 and 2 and provide more detail of Budget Activities Three and Four, for both O&M,N and O&M,MC, to the Sub-Activity Group level.

- BA-3 Training and Recruiting**
 - 3A Accession Training**
 - Officer Acquisition
 - Recruit Training
 - ROTC
 - Base Support
 - 3B Basic Skills and Advanced Training**
 - Specialized Skill Training
 - Flight Training
 - Professional Development Education
 - Training Support
 - Base Support
 - 3C Recruiting and Other Training and Education**
 - Recruiting and Advertising
 - Off-duty and Voluntary Education
 - Civilian Education and Training
 - Junior ROTC
 - Base Support
- BA-4 Administration and Servicewide Support**
 - 4A Servicewide Support**
 - Administration
 - External Relations
 - Civilian Manpower and Personnel Management
 - Military Manpower and Personnel Management
 - Other Personnel Support
 - Servicewide Communications
 - Base Support

Figure 4. Selected Sub-Activity Groups in the O&M,N Appropriation. Source: NAVCOMPT.

The O&M,N appropriation includes three additional Activity Groups in Budget Activity Four, Logistics Operations and Technical Support, Investigations and Security Programs,

- BA-1 Operating Forces**
 - 1A Expeditionary Forces**
 - Operational Forces
 - Base Support
- BA-3 Training and Recruiting**
 - 3A Accession Training**
 - Recruit Training
 - Officer Acquisition
 - Base Support
 - 3B Basic Skill and Advanced Training**
 - Specialized Skills Training
 - Flight Training
 - Professional Development Training
 - Training Support
 - Base Support
 - 3C Recruiting and Other Training and Education**
 - Recruiting and Advertising
 - Off-Duty and Voluntary Education
 - Junior ROTC
 - Base Support
- BA-4 Administration and Servicewide Support**
 - 4A Servicewide Support**
 - Logistics Support
 - Special Support
 - Servicewide Transportation
 - Administration
 - Base Support

Figure 5. Selected Sub-Activity Groups in the O&M,MC Appropriation. Source: NAVCOMPT.

and Support of Other Nations. However, these Activity Groups and the Sub-Activity Groups contained within them do not provide general support to manpower, with the exception of the Base Support Sub-Activity Group within each.

1. Activity Groups Not Meeting Selection Criteria

The majority of the Activity Groups and Sub-Activity Groups within the two Budget Activities, shown in Figures 4

and 5, on first inspection, were thought to provide general manpower support. Upon reflection, however, it was determined that many did not meet the criterion for inclusion as a program in support of the individual servicemember. The following discussion explains the reasoning for excluding specific Budget Activity Three and Four Activity Groups and Sub-Activity Groups from consideration. The reader will find it helpful to refer to Figures 4 and 5 in reviewing this section.

a. Accession Training

Within Budget Activity Three the Accession Training Activity Group, encompassing Officer Acquisition, Recruit Training, and Reserve Officer Training Corps (ROTC) Sub-Activity Groups, provides resources for initial training of new officers and enlisted personnel who enter the Navy and Marine Corps. As such, the costs associated with each person entering the service are one-time, once in a career, expenses. They are not recurring costs producing savings or expenditures that should be subtracted from or added to the O&M appropriation with adjustments to manpower levels. In the scenario of personnel reductions, the previously incurred cost of accessing the person now leaving the service is a sunk cost - it is unrecoverable.

Accession costs are independent of non specific adjustments to manpower levels generated by a service

decreasing its end strength faster than previously planned. The plans of the Navy and Marine Corps for bringing personnel into the service are connected to the projected manpower requirements of each of the services. This plan is a product of estimated manpower needs, taking into consideration attrition from specific paygrades. The accession goals are also related to specific warfighting skills requirements (e.g., number of aviators, submariners, aviation machinist mates, boiler technicians, infantrymen, etc.) which determine the type and number of individuals accessed. The costs associated with accessing officers, in particular, will vary with the warfare specialty into which the person is being accessed.

Changes to manpower levels do not necessarily result in changes to accession plans. Adjustments to O&M funding supporting accession plans should be made when those plans are adjusted, not when general manpower levels change.

b. Basic Skills and Advanced Training

The Basic Skills and Advanced Training Activity Group provides funding for training occurring immediately after completion of accession training and at various points later in a career. The types of training included in this activity group are specific to a member's occupational specialty and are directly related to accession plans or an individual's career path. The level and length of training

required varies with each warfare specialty, career path, rating or MOS.

Training paid for from this Activity Group includes: Navy "A" and "C" schools, which are basic and advanced vocational training associated with sailors' ratings; training associated with a specific assignment to a particular platform; flight and other warfare specialty training for officers; courses of instruction at the Naval War College, Armed Forces Staff College and the Naval Postgraduate School; and marine infantry and marine communications schools. Also included is a Sub-Activity Group for Training Support which provides funding for training command and training headquarters staff functions (FY 1995 O&M,N Budget Exhibit OP-05, pp.03-1 through 3).

Additionally, this Activity Group provides funding for the Temporary Duty Under Instruction (TEMDUINS) program. TEMDUINS funds the per diem costs associated with training in conjunction with Permanent Change of Station (PCS) orders when that training is less than 20 weeks long. Training over 20 weeks long requires separate PCS orders for the training with no associated per diem. This training, which occurs enroute to the next duty station, is usually to fulfill training prerequisites of the assignment to which the member is ordered.

The TEMDUINS funding associated with this training is dependant upon the types and numbers of PCS orders written.

The number of PCS orders with TEMDUINS associated is a function of billet requirements and the qualifications of the personnel being ordered to fill the billet. The amount of TEMDUINS varies with the length of training. Subsequently, the requirement for TEMDUINS associated with PCS orders will vary with individual circumstances. Changes in manpower will not necessarily affect the level of TEMDUINS required.

Training funded by this Activity Group covers a wide range of warfare and occupational specialties and occurs at various stages in many different career paths. The type, length and frequency of these types of training are a function of the programs into which personnel are being accessed or ordered to and cannot be tied to a general adjustment to manpower levels. Subsequently, Basic Skills and Advanced Training is not included in the definition of the O&M support "tail".

c. Recruiting and Other Training and Education

The Recruiting and Other Training and Education Activity Group is also within Budget Activity Three. The exclusion of the Sub-Activity Groups titled Civilian Education and Training and Junior ROTC from consideration is self-explanatory.

The Recruiting and Advertising Sub-Activity Group is also excluded for reasons similar to the exclusion of Accession Training. The number of recruits required and the

type and level of qualifications desired in recruits are determined by the accession plans of the Navy and Marine Corps (Discussion between the author and Navy Recruiting program analyst).

While it is true that all military personnel are recruited and accessed, the cost to recruit a sailor or marine is not a general support cost of maintaining that person in the service. Adjustments to manpower levels do not equate to changes in the recruiting goals or advertising budget. Therefore, Recruiting is not a cost to be considered with adjustments to manpower levels.

In the O&M,N appropriation, the Off-duty and Voluntary Education Sub-Activity Group funds the programs that make up the Navy Campus program. The components of Navy Campus are the Navy Campus staff, the Tuition Assistance program, the Program for Afloat College Education (PACE) and the Functional Skills program. Also funded within this Sub-Activity Group is the Defense Activity for Nontraditional Educational Support (DANTES), for which the Navy is the DoD executive agent, and the Veteran's Educational Assistance Program (VEAP) (Discussion between the author and Zero Based Training and Education Review (ZBT&ER), Education Working Group member).

The Off-Duty and Voluntary Education Sub-Activity Group in the O&M,MC appropriation is comprised of the Off-Duty Education Program and VEAP. The Off-Duty Education Program

includes the Basic Skills Education Program which is similar to the Navy Functional Skills program.

Of these programs, only Tuition Assistance, Functional Skills and VEAP programs for the Navy and Off-Duty Education and VEAP for the Marine Corps are included in this analysis of the O&M "tail" and are discussed later in Section 2.d.

The other Navy voluntary education programs mentioned are more a function of a base hosting a Navy Campus activity, or, in the case of PACE, a function of the number of ships in the fleet. Their level of funding is not directly related to the demand for off duty education by active duty personnel. Rather, their costs are primarily a fixed cost of operating an activity on a base or putting instructors aboard ship and are not considered part of the O&M support "tail".

d. Servicewide Support

Within Budget Activity Four the only Activity Group selected as having any applicability to general support of manpower is Servicewide Support. This Activity Group is comprised of several Sub-Activity Groups, of which Civilian Manpower and Personnel Management and External Relations for the Navy, and Servicewide Transportation for the Marine Corps, having no relation to active duty manpower levels, were excluded from consideration in this analysis.

Also excluded from this analysis, for less obvious reasons, were the Navy's Administration, Military Manpower and Personnel Management, and Servicewide Communications Sub-Activity Groups and the Marine Corps' Administration and Special Support Sub-Activity Groups.

The Administration Sub-Activity Groups contain funding for major headquarters staffs such as the staffs of the Secretary of the Navy, Chief of Naval Operations, Commandant of the Marine Corps, and Systems Commands (FY 1995 O&M,N Budget Exhibit OP-05, p.04-1 and FY 1995 O&M,MC Budget Exhibit OP-05, p.112). In the O&M,N appropriation, the Military Manpower and Personnel Management Sub-Activity Group supports the commands that develop the manning requirements documents for all Navy units and oversee the assignment of enlisted personnel to units Navy-wide (FY 1995 O&M,N Budget Exhibit OP-05, pp.04-1 through 3).

The Special Support Sub-Activity Group in the O&M,MC appropriation provides funding for the general management of the Marine Corps and various other activities such as the Marine Band, support of Marine prisoners incarcerated at Fort Leavenworth, printing, and travel related to personnel services. This Sub-Activity Group also includes funding for Marine Corps Family Service Centers and Child Care facilities which are addressed later. (O&M,MC FY 1995 Budget Exhibit OP-05, pp.110-112).

The decision to exclude these Sub-Activity Groups was based on Vento's (1992) conclusion that O&M funding levels in the infrastructure sub-categories of Force Management and Communications used in his thesis were not significantly linked to the indexed force structure or end strength measures of force size. Vento's study argues that the reason there is not a correlation between the Force Management and Communications infrastructure sub-categories and force size is because the programs they contain have large fixed cost components that are unaffected by minor fluctuations in force size (Vento, pp.63-65,78).

The remaining Sub-Activity Group in the O&M,N appropriation, Other Personnel Support, is a mixture of many programs including Subsistence-in-Kind, Armed Forces Radio and Television Service (AFRTS), internal relations activities, legal services for staffs, commands and individuals, the Board of Inspection and Surveys, Naval Safety Center, Retail Clothing and Ships' Stores, the Chaplain program, Alcohol Rehabilitation Centers, Family Service Centers and others (O&M,N FY 1995 Budget Exhibit OP-05, pp. 04-2,3).

Other than Subsistence-in-Kind, the programs within this Sub-Activity Group do not provide funding support that can be attributed to individual manpower. They are programs and commands that are already in place and required to operate at a specified activity level, regardless of the manpower level. Alcohol Rehabilitation Center and Family

Service Center funding are addressed separately in the following paragraphs. The O&M,MC appropriation does not have an Other Personnel Support Sub-Activity Group.

Family Service Centers of both the Navy and Marine Corps were initially thought of as providing a level of support to each sailor and marine. After discussions with Family Support program analysts, it was determined that Family Service Center program funding is not related to manpower levels on a base.

Family Service Centers are providing three programs - Family Advocacy, Transition Assistance, and Relocation programs - that are funded directly by DoD under congressional mandate. In the present environment of a shrinking military, the demand on Family Service Centers to provide services such as Relocation and Transition Assistance has increased.

Approximately 80 percent of Family Service Center costs are staff salaries. There is a minimum level of service and staffing that must be provided. Beyond that level, the installation commander has the discretion to increase staffing. The decision to add or delete staff, presumably based on requirements and demand for services, will vary among bases (Discussions between the author and Family Support program analysts). This information led to the decision to consider Family Service Center funding as primarily a fixed

cost of operating a base, independent of horizontal manpower adjustments.

Also considered as possibly relating to manpower levels, then decided against, was the Navy Alcohol Rehabilitation Center (ARC) program. Less than one percent of the active duty population receives inpatient treatment at the Navy's four Alcohol Rehabilitation Centers and much of the cost per patient for inpatient care is an allocated fixed cost of operating the facility. Each facility is operating at capacity, with waiting times up to three weeks for inpatient alcohol treatment. (Discussion between the author and Navy ARC budget analyst).

The Alcohol Rehabilitation Centers and the Drug and Alcohol Program Management Activity (DAPMA) also provide or support prevention training for a wide range of individuals. Because of the various types of training and the diversity of the population receiving this training, a percentage of the costs cannot be attributed to each manyear with any confidence. These factors result in the conclusion that there is little correlation between changes in manpower levels and O&M costs for the Alcohol Rehabilitation Program.

2. Activity Groups That Comprise the O&M "Tail"

Even the Activity Groups and Sub-Activity Groups that were determined to provide funding for programs that support generic manpower do not apply to every member of the Navy or

Marine Corps. Programs whose costs per unit of manpower are predominantly variable were determined to comprise the O&M manpower support "tail". The selected programs apply to, or are available to, the majority of Navy or Marine Corps personnel. The following section details the programs that are determined to most closely meet the criterion of providing general manpower support.

a. *Subsistence-in-Kind*

The most significant program to the O&M manpower support "tail", both in terms of dollar amount per person and applicability to the largest number of personnel, is the Subsistence-in-Kind program. Subsistence-in-Kind pays for meals for active duty enlisted personnel aboard ship, for marines in the field and for those who eat their meals in Navy and Marine mess halls ashore.

Subsistence-in-Kind is not applicable to officers or to enlisted personnel receiving Commuted Rations (COMRATS).² Officers receive a basic allowance for subsistence (BAS). Both of these allowances are paid for from the Military Personnel appropriation.

In the O&M,N appropriation, Subsistence-in-Kind is part of the Other Personnel Support Sub-Activity Group in Budget Activity Four. In the O&M,MC appropriation, the

²Commuted Rations is a monetary allowance paid to enlisted personnel not attached to a ship who do not eat their meals in mess halls ashore.

Logistics Support Sub-Activity Group is comprised of all programs pertaining to meals for marines. Among these programs are, Subsistence-in-Kind, Operational Rations, and Supplemental rations, discussed later in this section.

On average, over the four fiscal years studied, 1992 through 1995, approximately 87 percent of total Navy manyears and about 90 percent of total Marine Corps manyears are enlisted manyears.³ Subsistence-in-Kind pays for food services of 47 percent of the Navy's enlisted manyear total and 37 percent of the Marine Corps enlisted manyear total.

Of these percentages, approximately 34 percent of the Navy enlisted manyear total and 44 percent of the Marine Corps enlisted manyear total receiving Subsistence-in-Kind are absent from meals. Because there are different absentee rates for mess halls in the continental United States, overseas, and aboard ship, this percentage is a weighted average of the absentee rates for each category of mess hall in a given year. The weighted averages for absentees in each fiscal year, 1992-1995, were then averaged. As a result, the Subsistence-in-Kind program pays for the meals of an average of 66 percent of the Navy enlisted manyears and 56 percent of the Marine Corps enlisted manyears receiving Subsistence-in-Kind.

³In this research total Navy manyears refers to the sum of officer plus enlisted manyears and does not include midshipman manyears.

The daily meal rate applied to calculate the level of funding required in Navy and Marine Corps Subsistence-in-Kind programs also varies with the location of the mess hall, continental United States, overseas, and shipboard. A weighted average of the daily cost of meals for the three location categories for each fiscal year, 1992-1995, results in a range of daily rates per Navy manyear of \$4.60 to \$5.00. The range for Marine Corps daily rates per manyear is \$4.43 to \$5.03.

Multiplying the weighted average daily rate in a particular year by 365 days equals the amount of O&M funding required per enlisted manyear receiving Subsistence-in-Kind in that fiscal year. For example, the weighted average daily rate for Navy Subsistence-in-Kind in FY 1994 is \$4.79. Multiplying this rate by 365 days equals approximately \$1748 in Subsistence-in-Kind funding per Navy enlisted manyear, assuming the person represented by that manyear is present for all meals in the mess hall.

Next, the Subsistence-in-Kind eligibility factor would be applied to the total annual cost per Navy enlisted manyear. Of the enlisted manyears, 47 percent would be receiving Subsistence-in-Kind. Taking 47 percent of \$1728 yields \$821.56. The rate per manyear of \$821.56, multiplied by the meal participation rate of 66 percent (1 minus the weighted average absentee rate of 34 percent), results in a

Subsistence-in-Kind factor per FY 1994 Navy enlisted manyear of \$542.23. The equation for this calculation follows:

$$(Daily\ rate \times 365) \times \% \text{ on SIK} \times \% \text{ at meals} = \text{per MY rate}$$

The total O&M adjustment from Subsistence-in-Kind would be calculated by multiplying the \$542.23 enlisted manyear rate by the size of the enlisted manpower change.

Adjustments to O&M, like the observed FY 1994 understrength adjustment, when the officer/enlisted mix is not apparent, would apply the percentage of enlisted manyears in the total force to the manpower adjustment before multiplying by the rate per manyear. In general, this calculation is made for any program that is only available to or utilized by enlisted personnel. The following equation summarizes these two alternatives for calculating the total O&M adjustment resulting from a change in manpower level:

$$tot\ adj = \text{per MY rate} \times \text{enl adj} [\text{alternate:} \% \text{enl} \times \text{unspec adj}]$$

For example, if the Navy understrength were 10,000 manyears, then 87 percent of those manyears would be assumed to be enlisted manyears. To calculate the total adjustment to Subsistence-in-Kind from this 10,000 understrength example, the Subsistence-in-Kind factor of \$542.23 per enlisted manyear is multiplied by 8700, resulting in a \$4,717,400 total adjustment to Subsistence-in-Kind from the understrength.

In practice, it would be rare for the enlisted and officer composition of a manpower adjustment to be unknown. In

fact, the makeup of a manpower adjustment is often directed and could take the form of specific percentages or numbers of enlisted and officers in the adjustment.

(1) **Field Rations.** Meals for marines in the field are funded by the Operational Rations and Supplemental Rations programs of the Logistics Support Sub-Activity Group. Officers and enlisted marines receiving COMRATS are charged for their meals in the field.

To calculate the factor to be applied to each enlisted marine manyear for field rations, first, the number of enlisted manyears in the FMF receiving Subsistence-in-Kind must be determined. The percentage of enlisted manyears in the FMF, 63 percent, is used as an approximation of the number of marines who receive field rations.

Multiplying the percentage of enlisted marines receiving Subsistence-in-Kind (37 percent) by total enlisted manyears produces the amount of enlisted manyears receiving Subsistence-in-Kind. Applying 63 percent to the number of enlisted manyears receiving Subsistence-in-Kind results in the number of marine enlisted manyears in the FMF that also receive Subsistence-in-Kind.

Next, Operational Rations and Supplemental Rations funding for a given year are added. Dividing the marine enlisted manyears in the FMF receiving Subsistence-in-Kind, calculated above, into the sum of Operational and

Supplemental Rations produces the field ration rate per enlisted manyear in the FMF, also receiving Subsistence-in-Kind.

This rate must then be adjusted for the percentage of enlisted marine manyears that use field rations (63 percent) and the percentage of these manyears receiving Subsistence-in-Kind (37 percent). The equation for this calculation is:

$$\frac{\text{Field rations}}{\text{FMF enlisted MY on SIK}} \times \% \text{FMF enl} \times \% \text{enl MY on SIK} = \text{rate/MY}$$

b. FMF Support Costs Per Marine

The Marine Corps estimates about \$3530 in O&M manpower support costs per marine in 1995 dollars. Of this amount, \$1857 is for base operations support and \$128 is for base communications. Even though these costs are allocated to each marine, in practice the programs that comprise them are essentially fixed costs and would not be significantly affected by small changes to base manpower levels. The remaining \$1545 is for FMF Support cost, which is primarily the cost of issue and maintenance of "782 gear", mentioned earlier. The \$1545 FMF Support cost allocated per marine is assumed to have been adjusted for total marine manyears in the FMF (62 percent). Of these figures, only the FMF Support cost, found in O&M, MC Budget Activity One, Expeditionary Forces

Activity Group, is a cost that would be saved or incurred with adjustments to manpower.

c. Advancement in Rate Program

One program within the Training Support Sub-Activity Group that is applicable to the generic sailor and therefore is included in the definition of the O&M "tail" is the Advancement in Rate Program. This program provides funding for administering the Navy enlisted advancement program and pays for materials such as Personnel Qualification Standards (PQS) books, correspondence courses, texts and exams needed by sailors to earn promotion through paygrade E-7. Because Marine Corps enlisted advancements are based on selection boards after the rank of E-3, the Marine Corps does not have a similar program. (Discussion with Marine Corps budget official).

Of the total Advancement in Rate budget, the largest percentage is the labor costs of personnel who write, update and prepare the advancement materials. This portion of the budget is considered fixed and does not change appreciably with manpower levels. The printing portion of the Advancement in Rate program budget is considered in this analysis because it is seen as a cost that will vary with manpower changes.

Funding for printing in this program in FY 1992 through 1995 divided by the Navy E1-E6 manyears in each of those years results in a range of rates per E1-E6 manyear

between \$8.74 and \$2.78. Applying the percentage of E1-E6 in the enlisted manyears to these per manyear rates determines the amount of the Advancement in Rate program applied to each enlisted manyear. The equation representing this calculation is:

$$(cost/E1-6MY) \times (\% \text{ of } E1-6 \text{ enl}) = rate/MY$$

Multiplying the per manyear rate by the number of enlisted manyears in the manpower change equals the adjustment to the Training Support Sub-Activity Group that would be part of the overall Navy O&M "tail".

Using population data from the 1992 Navy Personnel Survey, approximately 89 percent of the Navy enlisted manyear total for FY 1992 are in the E1-E6 ranks. Taking 89 percent of the FY 1994 cost per participant of \$3.87 results in a rate of \$3.44 to be applied to each enlisted manyear for the Advancement in Rate program. Multiplying the 10,000 understrength example used earlier by 87 percent (enlisted to total manyears) equals an 8700 manyear adjustment. Therefore, the understrength would result in a \$30,000 adjustment to O&M from the understrength.

d. Off-Duty and Voluntary Education Programs

As mentioned earlier, Navy education programs considered in this analysis are the Tuition Assistance Program and VEAP. The Educational Assistance Test Program (EATP), while a voluntary, demand driven education program, is not

considered because less than one percent of the Navy enlisted end strength participates. Marine Corps education programs included in this analysis are the Voluntary Off-Duty Education and Basic Skills programs and VEAP.

(1) **Assistance.** Tuition Assistance pays for a large percentage of the costs of tuition and books towards the completion of undergraduate and first postgraduate degrees. The Functional Skills program is an on-duty program that pays for the costs of education to improve basic educational skills such as math and language abilities (FY 1995 O&M,N Budget Exhibit OP-05, p.03-1). Tuition Assistance and Functional Skills are voluntary programs whose level of funding is related to the demand for off-duty and voluntary education by active duty personnel.

While not all active duty personnel utilize these programs, they are a privilege available to all and their costs can be attributed to the percentage of active duty personnel who use the programs.

Tuition Assistance is used by an average of 8.3 percent of the Navy manyear total (Discussion between the author and Navy Off-Duty Education Program analyst). Dividing each year's number of personnel utilizing Tuition Assistance into the program funding results in a range of costs per participant between \$552.58 and \$740.51, FY 1992-1995. Therefore, 8.3 percent of the rate per participant would equal

the per manyear rate to be used to adjust O&M,N. An equation for this calculation follows:

$$(TA\ cost/part) \times (\% \ of \ tot \ part) = rate/MY$$

where: cost/part=cost per program participant.

The FY 1994 10,000 understrength example, used earlier, multiplied by 8.3 percent of the FY 1994 cost per participant of \$668.30 equals an adjustment to O&M of \$554,689. As Tuition Assistance is available to all personnel, there is no correction for officer-enlisted manyear mix. The same rate is applied to all manyears.

(2) Veterans' Educational Assistance Program. VEAP is also a voluntary program providing educational benefits by matching contributions from active duty personnel two-for-one up to a set limit of \$2700.00 in contributions per person. This \$2700.00 investment by a servicemember then provides \$8100.00 in educational benefits. VEAP is a diminishing program because it was only available to a small percentage of personnel on active duty today who entered service after the Viet Nam Era G.I. Bill and before the Montgomery G.I. Bill went into effect. Contributions to VEAP are matched by the participant's service from O&M funds. In contrast, Montgomery G.I. bill educational costs are paid for directly by the Veterans Administration (Discussion between the author and Navy VEAP program official).

The percentage of personnel participating in VEAP is decreasing annually. The Navy participation percentage for FY 1992 was 1.8 percent and the projection for participation in FY 1995 is 1.1 percent. Marine Corps participation figures are the same as those for the Navy and range from 1.4 percent in FY 1993 to 1.1 percent in FY 1995. The calculations for determining the per manyear rate and determining the overall O&M adjustment are the same as those described above for the Tuition Assistance program.

(3) Functional Skills Program. An average of 3.3 percent of the Navy's enlisted population participates in the Functional Skills program. Dividing the number of enlisted participants utilizing the Functional Skills program into the budget amount in each fiscal year determines the cost per participant in that year. Adjusting the cost per participant for the percentage of the enlisted manyears utilizing the program produces the rate per enlisted manyear. The following equation illustrates this calculation:

$$(cost/part) \times (\% \text{ of enl part}) = rate/enl MY$$

Multiplying this rate by the enlisted manpower adjustment results in the total O&M adjustment attributed to the Functional Skills program.

(4) Marine Corps Off-Duty Education. The Marine Corps Basic Skills program is equivalent to the Navy Functional Skills program. Because the funding data for the

Basic Skills program is aggregated with the Marine Corps funding in Off-duty Education, participants in the Basic Skills program will be added to participants in the Off-duty Education program for calculation purposes.

Marine Corps participation in the Off-Duty Education program ranges from 18 percent in FY 1992 to 27 percent in FY 1995. Basic Skills program participation ranges from 4 percent to 2 percent. Summing the participants in each program and dividing by the total manyears equals the overall participation rate in Off-Duty Education in a given year.

For example, in FY 1994, 46,815 participants in Voluntary Off-Duty Education plus 3,606 participants in the Basic Skills Education program equals 50,421 total participants in Off-Duty Education. Dividing this total by FY 1994 manyears equals a 29 percent participation rate. Participants, 50,421, divided into the Off-Duty Education program funding of \$9.74 million in FY 1994 results in a rate of \$193 per participating manyear. The rate per participating manyear and the participation rate can then be used to derive the O&M adjustment applied to the Off-Duty Education Sub-Activity Group when there are adjustments to manpower levels. The following equation summarizes this example:

$$(cost/part) \times (\% \text{ of tot MY part}) = rate/MY$$

Like Navy Tuition Assistance, this rate is applied to all manyears, officer and enlist

Since the Marine Corps O&M Exhibit OP-05 does not show separate funding for these two programs, and it could not be determined if a person enrolled in Basic Skills is also enrolled in Voluntary Off-Duty Education, the preceding example presents some risk of double counting. Additionally, Basic Skills is primarily an enlisted program while Voluntary Off-Duty Education is available to both officers and enlisted. Using a total combined manyear amount instead of separate manyear totals for each category results in a somewhat less accurate participation rate.

e. General Training.

As discussed earlier in this chapter, few training programs were found to be applicable to all ranks and occupational specialties. However, the Navy Zero Based Training and Education Review (ZBT&ER) Education Working Group recommended grouping the training programs and subjects required of all Navy members - collectively called General Navy Training (GNT) - and providing this type of training primarily at the command level by trained instructors using standardized materials. Training programs recommended for inclusion were: Navy Rights and Responsibilities; drug and alcohol abuse; information security; fraternization; and financial management. Many of these programs constitute annual training requirements for all Navy members.

Also included in this group were courses taught at the local level by Mobile Training Teams, such as core values, sexual harassment and equal opportunity, and some formal courses of instruction, such as Naval Leadership (NAVLEAD) and Total Quality Leadership (TQL) (Discussion between the author and a ZBT&ER Education Working Group member).

Discussions with Navy training officials on the staffs of the Chief of Naval Operations and the Chief of Naval Education and Training revealed that the GNT program proposed by the ZBT&ER Education Working Group will not be implemented. Instead, the Navy plans to integrate this type of general training within courses of instruction titled, "Leader Development Education and Training". These courses will be taught in a formal classroom setting at school sites located in areas of high Navy population concentration. Navy personnel will receive the training at various stages in their career, before key leadership assignments. (CNO Executive Steering Committee briefing, Feb. 1994).

More significantly, there is no system in place to accurately track the costs of this type of training program. Subsequently, an aggregate total budget figure for all GNT courses is not available. The cost of courses presently taught at the local level by command personnel only reflects the cost of training the designated instructor. Furthermore, the cost does not include the cost of the time of the students who receive the training (Discussion between the author and Navy

training program official). It is estimated that the average officer spends 36.5 days and the average enlisted person spends 58.5 days of a 20 year career in leadership and human relations training (CNO Executive Steering Committee briefing, Feb 1994). This training time is in addition to topics required under the present General Military Training (GMT) program.

The only general training budget figures available were FY 1994 and 1995 figures for the proposed GNT program developed by the ZBT&ER Education Working Group (Discussion between the author and a ZBT&ER Education Working Group member). Dividing the GNT total for FY 1994 by the total manyears results in a \$14.31 GNT rate associated with each manyear. A caution associated with this figure is that it also includes the cost of training that is required only at certain points in a career and not just the costs of annually required training.

The Marine Corps conducts training in topics similar to those in the Navy GNT/GMT program at the command level but does not track the costs of this training (Discussion between the author and Marine Corps training budget official).

The Marine Corps does, however, require all marines to receive formal training at certain stages in their careers. Enlisted marines must attend infantry training upon completion of recruit training; however, for the purposes of

this study, that training is considered part of accessing a marine. Infantry training is phase I of four phases of Marine Battle Skills Training (MBST). Phase IV of MBST is required of all selected E6's and therefore is considered rank dependant and occurs once in a career. The cost of MBST phases II and III are funded out of field unit budgets and occur at intervals between E1 and E6.

Marine officers are required to receive Command and Staff College (CSC) training at the Marine Corps Command and Staff College, or its equivalent, upon achieving the rank of major (Discussion between the author and a Marine Corps personnel official). CSC training, like MBST, is a once in a career event driven by achieving a particular rank and is not considered to be part of the marine's O&M "tail".

3. Base Support Activity Groups

As can be seen in the budget structure of both the O&M,N and O&M,MC appropriations, the Base Support Activity Group is in every Budget Activity. Base Support provides resources for the day-to-day operation of bases that fall under a certain Budget Activity. For example, an operational base of either the Navy or Marine Corps would be supported by the Base Support Activity Group in Budget Activity One. Similarly, a training base would be supported by Base Support in Budget Activity Three.

Base Support funds a variety of base functions such as communications, transportation, utilities, real property maintenance (RPM), Morale, Welfare and Recreation (MWR) and Bachelor's Quarters (BQ) operations. For purposes of this study, the portions of Base Support providing manpower support were considered from the perspective of the total program for each service. In other words, the sum of the program funding within Base Support in each of the four Budget Activities comprises the total program.

Within Base Support, the BQ program and the MWR program were initially thought to apply generically to all, or a large percentage of, active duty personnel. Other programs within Base Support were not considered to either provide resources supporting general manpower or consist of funding that would vary significantly with small changes to base manpower levels.

a. Bachelor's Quarters

In examining the BQ portion of Base Support it was discovered that the appropriated funding of BQ operations, in the context of this study, is primarily a fixed cost of operating the BQ's on a given base.

Relatively small changes in the level of manning on a base will not affect the costs of operating a BQ. These costs include staffing, but not housekeeping personnel, furniture replacement, common area cleaning and maintenance.

The costs that would be expected to be variable, such as linen service, housekeeping and transient information and comfort packages are paid for out of non-appropriated dollars. A portion of these variable costs are covered by the fees charged to transients and permanent party residents who elect to purchase housekeeping services. The remainder of the costs not covered by fees charged are paid for from revenues generated by other non-appropriated fund activities which are invested and earn a return (Discussions between the author and Navy BQ housing officials). Permanent residents, other than geographic bachelors, also will typically forfeit their Basic Allowance for Quarters (BAQ) and Variable Housing Allowance (VHA) when they occupy BQs. These allowances are paid from the Military Personnel appropriations.

b. Morale, Welfare, and Recreation

The MWR portion of Base Support includes the appropriated funding that supports the operation of base fitness centers, gymnasiums, bowling alleys, ticket offices, auto hobby shops and the many other activities available to active duty personnel, their dependents, and retirees. A large amount of MWR funding is for the military Child Development Centers and Youth Centers (Discussion between the author and Navy budget official). As a major subset of MWR, funding for child care - a significant quality of life issue - is discussed in the following paragraphs.

The largest part of child care costs is the wage expense of the staff of the Child Development Centers and subsidies paid to the in-home child care providers. This subsidy enables the providers to charge less than civilian run child care establishments in the community.

The Military Child Care Act of 1989 requires that the services match revenues generated by charges to child care users dollar for dollar. DoD estimates that the average space in a child care facility must generate \$2750 to cover the direct costs of that space. A space corresponds to an opening or place for a child in a child care facility. The service must at least match this \$2750 for a total cost of \$5500 per child care space. The child care program is mandated to run as a break even program (Discussions between the author and Navy child care budget analysts).

Data obtained for both the Navy and Marine Corps shows that their child care facilities are operating at capacity with waiting lists for all age groups. The Navy facilities waiting list, as of 30 September 1993, was 10,463 while the Marine Corps waiting list, as of 1 March 1994, was 3,502 (Navy and Marine Corps DoD Child Development Program Annual Summary of Operations, DD Form 2605).

In this maximum capacity situation, the costs of operating the child care program are fixed until the military population decreases enough to end the waiting list and the number of child care spaces utilized decreases enough to cause

staff reductions. Staffing is based upon set child to care provider ratios which vary with the age group of the children. These factors would make it extremely difficult to estimate the level of reductions in child care required to trigger staff reductions. Since small adjustments to base manpower levels, such as those resulting from the FY 1994 understrength, are unlikely to affect the level of operations at Navy and Marine Corps child care facilities, there should be no adjustment to O&M,N or O&M,MC. Child care, therefore, should not be considered part of the O&M tail, at least until capacity exceeds the demand for child care.

NAVCOMPT has provided per capita rates of MWR spending for the Navy and Marine Corps which are shown in Table I.

Table I. NAVY AND MARINE CORPS MWR SPENDING PER PERSON.
SOURCE: NAVCOMPT.

	FY 1992	FY 1993	FY 1994	FY 1995
Navy	\$342	\$370	\$551	\$621
Marine	\$263	\$319	\$313	\$388

These figures include the appropriated funding for salaries, maintenance, utilities, supplies and equipment and employee travel. Integral to these figures are the costs of the Child Care program. Excluded from these figures is the cost paid for shipping of merchandise to Exchanges overseas. These fees enable the Exchanges to charge prices that are

comparable to Exchange prices in the United States (BUPERS memorandum to NAVCOMPT of 9 May 1994).

Considering the items included in this estimate of MWR costs per person, it is apparent that a majority are fixed costs. These costs will not change appreciably with adjustments to the manpower level of a base and therefore should not be considered part of the O&M "tail".

V. ANALYSIS

A. O&M SUPPORT FUNDING PER UNIT OF MANPOWER

The following tables were constructed by combining the per manyear rates for programs identified as supporting the costs associated with a unit of manpower in each fiscal year, 1992-1995. Each table provides a total per manyear rate that can be multiplied by the amount of the personnel adjustment under consideration. The result is the O&M adjustment that should be applied in response to a manpower adjustment.

Tables II through V should be used when manpower changes are specified in officer and/or enlisted manyear amounts or after determining the officer and enlisted manyears in an unspecified manpower adjustment by applying the percentage of enlisted and officer manyears in total manyears. For comparison purposes, as well as targeting the adjustments, O&M programs supporting manpower and the total for each year, fiscal years 1992 through 1995, are shown. Appendix B summarizes the calculations used to create these tables.

In general, the data used for FY 1992 and 1993 are actual execution figures, while FY 1994 figures are estimates and FY 1995 figures are the President's budget request, now in congressional review. FY 1994 and 1995 Navy Tuition Assistance and Functional Skills programs participation rates are

Table II. NAVY OFFICER O&M SUPPORT PER MANYEAR. SOURCE: AUTHOR.

NAVY OFFICER MANYEAR RATES				
PROGRAM	92	93	94	95
Tuition Asst	46.58	45.86	55.47	61.46
VEAP	15.64	9.37	9.53	8.06
GNT			14.31	13.72
TOTAL	\$62.22	\$55.23	\$79.31	\$83.24

Table III. NAVY ENLISTED O&M SUPPORT PER MANYEAR. SOURCE: AUTHOR.

NAVY ENLISTED MANYEAR RATES				
PROGRAM	92	93	94	95
SIK	531.06	520.83	542.23	566.12
Adv/Rate	7.78	6.79	3.44	2.47
Tuition Asst	46.58	45.86	55.47	61.46
Func Skls	3.98	4.46	4.93	6.62
VEAP	15.64	9.37	9.53	8.06
GNT			14.31	13.72
TOTAL	\$605.04	\$587.31	\$629.91	\$658.45

extrapolations from the participation rates for FY 1992 and 1993. The FY 1992 and 1993 participation rates in Tuition Assistance and Functional Skills were derived by dividing the number of participants by total and enlisted manyears, respectively. Since only the FY 1995 Marine Corps FMF Support cost was known, the figures for the remaining fiscal years were derived by deflating the FY 1995 figure using Department of the Navy Price Escalation Indices.

Table IV. MARINE ENLISTED O&M SUPPORT PER MANYEAR. SOURCE: AUTHOR.

MARINE ENLISTED MANYEAR RATES				
PROGRAM	92	93	94	95
FMF Support	1426.34	1464.81	1502.98	1545.00
SIK	335.03	335.03	343.35	353.18
Field Rations	278.30	138.53	239.02	263.74
Vol Ed	51.21	50.22	56.01	56.01
VEAP	19.77	12.34	9.55	8.55
TOTAL	\$2110.65	\$2000.93	\$2150.91	\$2226.48

Table V. MARINE OFFICER O&M SUPPORT PER MANYEAR. SOURCE: AUTHOR.

MARINE OFFICER MANYEAR RATES				
PROGRAM	92	93	94	95
FMF Support	1426.34	1464.81	1502.98	1545.00
Vol Ed	51.21	50.22	56.01	56.01
VEAP	19.77	12.34	9.55	8.55
TOTAL	\$1497.32	\$1527.37	\$1568.54	\$1609.56

FY 1993 Field Ration rates per enlisted marine in Table IV are much lower than the other years studied. Using FY 1992 funds, Congress bought and provided Meals-Ready-To-Eat (MRE) to the Marine Corps in FY 1993 as a means of invigorating the industry that produces the MREs. This action reduced MRE purchases by the Marine Corps nearly in half in FY 1993, reflected in the low Field Ration rate. FY 1992-1994 rates are also somewhat reduced because a small portion of MREs required in those years were bought and paid for at the beginning of

Operation Desert Shield/Desert Storm. Consequently, the amount of MREs the Marine Corps had to buy was decreased (Discussion between the author and Marine Corps budget official).

The fact that no program within the O&M appropriation applies to literally every person in either the Navy or Marine Corps means that there is no truly common level of support provided by O&M that can be applied per member or per manyear in decisions to adjust O&M funding for manpower support functions. The adjustments and calculations described in Chapter IV compensate for the fact that these programs have varying percentages of personnel using or benefitting from them. Other adjustments were made to account for the fact that not all personnel, officers or enlisted, will participate in any given program. By accounting for these variables in the per manyear rates calculated and summarized in Tables II through V, the resulting per manyear total can simply be multiplied by the amount of the manpower adjustment.

B. TARGETING ADJUSTMENTS TO THE O&M APPROPRIATION

As discussed in Chapters I and II, the FY 1994 O&M,N appropriation was cut by \$36.9 million as a result of an understrength in Navy manpower. \$26.9 million of the cut was applied in the Base Support Activity Groups of the four Budget Activities. An additional \$10 million was taken from the Administration, Military and Personnel Management, Other Personnel Support, and Servicewide Communications Activity

Groups of Budget Activity Four (U.S. Congress, Committee on Conference, Report No. 103-339, pp.56-59).

The understrength that precipitated this cut was approximately 16,450 below end strength at the close of FY 1993 (Discussion with Navy budget official). The following analysis proposes what the reduction might have been and where it would have been taken given the relationship between the O&M appropriation and manpower support presented above.

The analysis begins with the Navy manyear rates presented in Table VI. The manyear rate for each of the programs listed can be multiplied by the number of manyears, officer and enlisted, in any given adjustment. In this case, the 16,450 unspecified understrength at the end of FY 1993 will be used to determine the adjustment that would have been made to the FY 1994 defense budget as a result.

Multiplying 16,450 by the percentage of enlisted manyears in total Navy manyears in FY 1994 (87 percent) provides the number of enlisted manyears with which to enter Table II, 14,312. The difference between the enlisted manyears and the total manyears is the number of officer manyears with which to enter Table III, 2138. Multiplying the number of enlisted and officer manyears by the rate per manyear in an individual program from Tables II and III will result in the adjustment to be applied to that particular program. Adding the program adjustments for both the enlisted and officer manyear portions of the understrength will result in the overall adjustment to

be made to O&M,N from the understrength. Table VI was created by making these calculations for the Navy using FY 1994 rates and summarizes the programs and amounts of the reductions.

Table VI. EXAMPLE OF O&M,N REDUCTIONS FROM AN UNDERSTRENGTH (FY 1994 RATES). SOURCE: AUTHOR.

BA-3 TRAINING AND RECRUITING				
Adv in Rate	.87(16,450)x	\$3.44	=	\$ 49,233
Functional Skills	.87(16,450)x	4.93	=	70,558
Tuition Asst	16,450 x	55.47	=	912,482
VEAP	16,450 x	9.53	=	156,768
GNT	16,450 x	14.31	=	235,400
BA-4 ADMIN AND SERVICEWIDE SUPPORT				
SIK	.87(16,450)x	542.23	=	7,760,396
Total:				<u>\$9,184,837</u>

Based on the rationale presented, the FY 1994 O&M,N reduction, or O&M "tail", resulting from the FY 1993 understrength, would have been about one fourth the reduction taken by Congress - i.e., \$9.2 million instead of \$36.9 million. This reduction would have targeted the programs that have been identified as supporting manpower and would fall in the Training Support and Off-Duty and Voluntary Education Sub-Activity Groups in Budget Activity Three and the Other Personnel Support Sub-Activity Group of Budget Activity Four.

By this estimate, the remaining \$27.7 million of the O&M "tail" taken as a result of the FY 1993 understrength can be viewed as an undistributed reduction with the potential effect of decreasing readiness. By taking this \$27.7 million out of

Base Support, the O&M "tail" becomes a disassociated horizontal reduction against unrelated programs.

As mentioned in Chapter II, a base commander can absorb only so much in the way of cuts to Base Support dollars before being forced to put off real property maintenance and cut back on services to tenant commands and personnel. These actions in turn hurt readiness and morale. History has shown that horizontal cuts lead to decreases in readiness and "hollow forces" (Aspin, 1993, p.4).

C. TRENDS AND OBSERVATIONS FROM THE DATA

The final step in the analysis phase of this research was to evaluate the data that went into this study and the data resulting from calculations made in conducting this research. Looking for noteworthy trends, percentage changes in funding were compared to percentage changes in manpower in programs selected as comprising the O&M tail.

1. Manpower Measures

Tables VII and VIII on the following pages show the percentage changes in manpower levels for the Navy and Marine Corps between each fiscal year, FY 1992-1995.

2. Subsistence-in-Kind

Subsistence-in-Kind is an enlisted program whose funding is based upon manyears. A comparison of changes in Navy enlisted manyears with changes in the number of enlisted manyears receiving Subsistence-in-Kind shows that the

Table VII. NAVY MANPOWER TRENDS, FY 1992-1995. SOURCE: AUTHOR.

END STRENGTH (percent change)

	FY 92-93	FY 93-94	FY 94-95
Enlisted	-6.2	-7.9	-6.8
Officer	-4.0	-5.5	-3.6
Midshipman	-5.9	-0.9	-3.3
Total E/S	-5.9	-7.5	-6.3

MANYEARS (percent change)

	FY 92-93	FY 93-94	FY 94-95
Enlisted	-6.0	-7.0	-7.0
Officer	-3.0	-4.1	-5.3
Midshipman	-3.1	-2.1	-1.7
Total M/Y	-5.6	-6.6	-6.7

percentage of enlisted manyears receiving Subsistence-in-Kind has decreased by a larger percentage than the percentage decrease in enlisted manyears. This is illustrated in Table IX.

There are several possible explanations for this difference. First, base commanders may be permitting more of their unmarried base population to receive COMRATS instead of requiring personnel to eat in the mess hall. Second, a larger percentage of the people leaving the Navy may be younger, more junior ranked sailors and less likely to be married, living and subsisting off base. Finally, more personnel leaving the

Table VIII. MARINE CORPS MANPOWER TRENDS, FY 1992- FY 1995.
SOURCE: AUTHOR.

END STRENGTH (percent change)

	FY 92-93	FY 93-94	FY 94-95
Enlisted	-3.3	-2.4	+1.0
Officer	-3.7	-3.1	-0.08
Total E/S	-3.4	-2.5	-

MANYEARS (percent change)

	FY 92-93	FY 93-94	FY 94-95
Enlisted	-5.1	-3.5	-1.8
Officer	-2.5	-3.2	-0.7
Total M/Y	-4.9	-3.4	-0.8

Navy may have been receiving Subsistence-in-Kind because they were assigned to a ship as their final duty station prior to discharge.

The Marine Corps data in Table X shows trends opposite those of the Navy data. Except for FY 1994-95, the percentage of marines receiving Subsistence-in-Kind increased while the enlisted manyears were decreasing.

Table IX. COMPARISON OF NAVY ENLISTED MANYEAR CHANGES WITH CHANGES IN SUBSISTENCE-IN-KIND. SOURCE: AUTHOR.

	FY 92-93	FY 93-94	FY 94-95
Manyears	-6.0	-7.0	-7.0
SIK	-6.3	-8.7	-8.7

Table X. COMPARISON OF MARINE CORPS ENLISTED MANYEAR CHANGES WITH CHANGES TO SUBSISTENCE-IN-KIND. SOURCE: AUTHOR.

	FY 92-93	FY 93-94	FY 94-95
Manyyears	-5.0	-3.5	-0.7
SIK	+1.9	+3.4	-1.6

These results may also have several explanations. A stricter policy may be making it more difficult for single marines to receive monetary allowances to live and subsist off base, or more of the Marine Corps drawdown in personnel is affecting the older, more senior marines who would be more likely to be married and/or living off base.

3. Off-Duty and Voluntary Education

Trends in Off-Duty and Voluntary Education for the Navy show a decrease in the number of participants in both Tuition Assistance and the Functional Skills programs which is consistent with a decrease in active duty personnel. However the cost per participant in both programs is increasing. Some of this increase is undoubtedly due to inflation but the size of the percentage increase far exceeds the rates of inflation in the years being studied.

The increases in the budget of these programs can be reasonably explained by the decreases in Navy manpower. As the size of the Navy comes down the personnel remaining on active duty are more likely to utilize off duty education or increase

the number and frequency of courses taken to better prepare themselves for a new career outside of the military (Discussion between the author and Navy Off-Duty Education program budget analysts). Table XI illustrates this point.

One caveat associated with the number of participants in the Tuition Assistance and Functional Skills programs, mentioned earlier, is that FY 1994 and FY 1995 figures are extrapolated from FY 1992 and FY 1993 participation rates. The FY 1992 and 1993 rates were derived by dividing the number of program participants by total manyears for Tuition Assistance and enlisted manyears for Functional Skills.

Table XI. NAVY OFF-DUTY AND VOLUNTARY EDUCATION TRENDS, FY 1992-1995. SOURCE: AUTHOR.

NAVY TUITION ASSISTANCE (percentage change)

	FY 92-93	FY 93-94	FY 94-95
Budget	-2.8	+12.8	+3.3
Participants	-1.3	-13.0	-6.3
Cost/Partic	-1.5	+29.8	+10.3

NAVY FUNCTIONAL SKILLS (percentage change)

	FY 92-93	FY 93-94	FY 94-95
Budget	+4.6	+3.2	+25.0
Participants	-12.1	-3.9	-6.8
Cost/Partic	+19.0	+7.5	+34.0

Marine Corps Off-Duty Education data does not correspond to the Navy observations. Participation figures decreased between FY 1992-93 and increased slightly between FY

1993-94 before leveling between FY 1994-95. Budget amounts changed slightly over the period, following the participation figures and are nearly constant (+1.2 percent) between FY 1994 and 1995. Cost per participant over the period has also remained nearly constant. This observation may be attributed to the Marine Corps budget showing only a single Off-Duty Education program budget amount. This figure is divided by the sum of Voluntary Off-Duty Education participants and Basic Skills program participants, as mentioned earlier. This method of calculation may have caused the cost per participant figures to be lower than if the two programs were considered separately.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

1. Programs in Support of Manpower

There are very few Activity Groups, Sub-Activity Groups and programs in the O&M,N and O&M,MC appropriations that both provide support to a broad spectrum of personnel and whose costs vary directly with changes in manpower levels.

There were no programs identified which applied to all Navy and Marine Corps personnel with the possible exception of General Military Training. As discussed in Chapter IV, the GMT program costs are not tracked by either the Navy or the Marine Corps.

Many Activity Groups, Sub-Activity Groups and programs were preliminarily thought to provide common support to manpower. However, upon examination, it was found that their funding levels were driven either by policy decisions not necessarily related to manpower levels or were related to minimum levels of service and operations that were required regardless of manpower levels.

The Subsistence-in-Kind program was identified as the most significant Navy O&M program whose funding related to manpower levels. Subsistence-in-Kind is applicable to large portions of the Navy and Marine Corps populations. Of the Navy

programs identified as defining the O&M "tail", Subsistence-in-Kind has the highest dollar value per manyear. Consequently, O&M funding changes resulting from manpower level changes are greatest in the Subsistence-in-Kind program. The Subsistence-in-Kind program is part of the Other Personnel Support Sub-Activity Group in the O&M,N appropriation. Subsistence-in-Kind, along with Operational and Supplemental Rations, define the majority of the Logistics Support Sub-Activity Group in the O&M,MC appropriation. These programs are in Budget Activity Four of their respective appropriations.

The Fleet Marine Force (FMF) Support program of the Marine Corps was found to be applicable to a large portion (62 percent) of the Marine Corps population. This percentage of marines in the FMF and the high cost per marine in this program - \$1545 in FY 1995 - make it the largest piece of the marine O&M "tail". This program is part of O&M,MC Budget Activity One, Operating Forces.

Additional O&M programs identified as relating directly to personnel level changes were in the Off-Duty and Voluntary Education Sub-Activity Groups of the O&M,N and O&M,MC appropriations. Applicable Navy programs were Tuition Assistance and Functional Skills. Applicable Marine Corps programs were Voluntary Off-Duty Education and the Basic Skills program. The Veteran's Education Assistance Program (VEAP) was identified as applying to the O&M "tail" of both services.

2. Congressional Reductions Resulting From the O&M Tail

A reduction was made to the O&M,N appropriation during the FY 1994 congressional budget review when the Navy ended FY 1993 about 16,450 end strength below their budgeted end strength. This understrength resulted in a FY 1994 \$36.9 million congressional reduction to O&M,N, called the O&M support "tail". The concept of the O&M "tail" is based on the fact that parts of the O&M appropriation provide support to manpower and the assumption that as manpower levels change, the O&M support of that manpower should change correspondingly.

Of the \$36.9 million reduction, the Base Support Sub-Activity Groups of the four Budget Activities were reduced by a total of \$26.9 million. The remaining \$10 million came from the Administration, Military Manpower and Personnel Support, and Servicewide Communications Sub-Activity Groups of Budget Activity Four.

a. Horizontal Reductions to O&M

Reductions of this kind to the Base Support Sub-Activity Groups are horizontal reductions, absorbed as an undistributed reduction, applied to all bases in a particular Base Support Sub-Activity Group.

An O&M reduction, related to a manpower reduction, taken mostly from Base Support carries the assumption that the

majority of the support costs of that manpower is paid for by the base on which the manpower is stationed.

This assumption increases the potential for negatively impacting the quality of life of personnel on the bases. As the bases absorb these types of horizontal reductions, despite the fact that they are not experiencing a substantial decrease in base population, the types and level of services provided to tenants and residents may have to be decreased. Real Property Maintenance (MRP) projects may be delayed or canceled, increasing the MRP backlog.

The concept that less manpower means less cost in all programs supporting manpower assumes that most of the costs supporting that manpower are variable. This assumption ignores the fact that the costs of some personnel support programs will be predominantly fixed despite manpower adjustments. While O&M reductions stemming from manpower reductions are intended to cut the "tail", there is a danger of cutting into the "tooth" when making undistributed reductions.

The fact that horizontal cuts decrease readiness and can lead to "hollowing the force" is well established by the experience of past military downsizing. This experience is behind the logic of the vertical reductions being pursued by the Department of Defense and the Defense Base Realignment and Closure Commission.

b. Specific Adjustments to O&M

Specific adjustments can be made to the parts of O&M that support personnel when there are manpower changes. By targeting the adjustments to programs that most directly provide support to personnel and making the amount of the adjustments correspond to the percentage of personnel who benefit from the support programs, funding is preserved in programs that are less affected by a change in manpower.

This research has calculated examples of O&M support costs per manyear which, when multiplied by the size of the manpower adjustment, result in an estimate of the amount of O&M funding to be adjusted. The adjustments can be targeted to the programs which are most directly affected by the change in manpower.

B. RECOMMENDATION

Budgetary decision makers should target O&M adjustments resulting from manpower changes to the programs most affected by a change in the manpower level, identified in this research. The result will be a specific adjustment that affects only those programs whose costs will change most directly from the changed level of manpower.

C. OBJECTIVES AND RESEARCH QUESTIONS

The objectives of this research were to: examine the O&M,N and O&M,MC appropriations in depth, with the goal of

identifying the portions of the appropriations that provide financial support to manpower; and, determine if it is possible and desirable to establish a framework to be used in making future adjustments to O&M that relate to a manpower adjustment.

The research questions guiding the accomplishment of these objectives and the answers discovered follow:

- What is the logical relationship between changes in active duty manpower levels and adjustments to the O&M appropriations?

The logical relationship between changes in active duty manpower levels and the resultant adjustment to the O&M,N appropriation is characterized by only a small number of O&M programs that support all, or most, personnel and whose costs will vary with marginal changes in manpower.

While there is a corresponding adjustment to O&M stemming from a manpower level change, that adjustment is more narrowly defined than the FY 1994 reduction attributed to the Navy understrength. The adjustment is more appropriately applied as a specific adjustment to programs whose costs have been identified as varying with the manpower level. The size of the adjustment should correspond to the percentage of the population that benefits from the resources provided by the program.

An adjustment to programs whose costs are primarily fixed in relation to the manpower level and the assumption that a

particular program applies to the entire population has the potential to either harm readiness by underfunding a program or waste resources by overfunding a program.

- What specific parts of the O&M,N and O&M,MC appropriations relate to support of manpower, regardless of rank, occupational or warfare specialty?

There were no parts of the O&M,N and O&M,MC appropriation supporting manpower that provided support to every sailor or marine, regardless of rank, occupational or warfare specialty. Programs identified as supporting the broadest range of personnel fell into two categories: those whose costs were primarily fixed in relation to marginal manpower level changes and those whose costs would vary with manpower changes.

The parts of the O&M appropriations selected to define the O&M personnel support "tail" were the programs whose costs will vary with the level of manpower supported. These programs were primarily in Budget Activity Three, Training and Recruiting and Budget Activity Four, Administration and Servicewide Support. The exception was the Marine Corps FMF Support program, which was part of Budget Activity One, Operating Forces. Navy programs included were Subsistence-in-Kind, Advancement in Rate, Tuition Assistance, Functional Skills, VEAP, and General Navy Training. Other programs included in the Marine Corps analysis were Subsistence-in-Kind/Field Rations, Voluntary Off-Duty Education, Basic Skills, and VEAP.

- What has been the recent historical relationship between changes in active duty manpower levels and adjustments to the O&M appropriation?

Recent historical relationships between changes in active duty manpower levels and resultant adjustments to the O&M appropriation by Congress were found to be inconsistent. Examples include: an understrength in Navy end strength at the close of FY 1992 which had no clear corresponding adjustment in O&M,N; and, the vast differences between the amounts of the adjustments to Army, Navy and Air Force O&M when all three services finished FY 1993 understrength.

- How is that relationship being applied by the Congress and within the Department of Defense when making adjustments to the O&M appropriation resulting from manpower level changes?

There is no agreed upon relationship between adjustments to manpower levels and adjustments to O&M funding in support of manpower within the Department of Defense. As discussed in Chapter I, there is a "customary" O&M support "tail" of \$2000 per unit of manpower that has been applied in the past by NAVCOMPT. The Marine Corps has a current estimate of \$3530 O&M support per marine. Others believe that a percentage change in manpower leads to an equivalent percentage change in O&M funding.

Congress' handling of the concept of the relationship between changes in manpower levels and related changes in O&M

funding is summarized in the answer to the preceding research question, above.

This research has examined the O&M,N and O&M,MC appropriations and identified the Budget Activities, Activity Groups, Sub-Activity Groups and programs that most directly support manpower. The programs identified are those that both support a general cross-section of personnel and whose funding levels will change with changes to manpower levels.

This research also established a framework for making adjustments to the O&M appropriation in response to manpower changes. When making future O&M adjustments resulting from manpower changes, utilization of the framework presented will preserve O&M funding in other programs linked to readiness or quality of life.

D. FINAL CONCLUSIONS

The small number of personnel support programs whose costs will change with adjustments in manpower levels causes relatively minor adjustments to O&M funding. These adjustments can and should be targeted to the programs identified in this research.

It is not until ships, submarines and aircraft squadrons are decommissioned and bases are closed that broader and more significant levels of O&M funding reductions can be made. Decommissioning ships, submarines and aircraft squadrons will save the overall O&M costs associated with these units. The

closing of a base will cause the O&M costs of operating that base, including O&M costs of programs that support base personnel, to be saved. For example, the MWR department, the Child Development Center, the Family Service Center and the BQ's all will close when the base closes. When these decomissionings and closures also result in a reduction to manpower levels the O&M support "tail", defined in this thesis, will also be saved.

E. RECOMMENDED SUBJECTS FOR FOLLOW ON RESEARCH

1. An analysis of the relationship between manpower changes and O&M funding in support of manpower for the Army, Air Force and the reserve components of all services is recommended. Research in this area may yield beneficial comparisons because of variation in the manner in which Congress has applied the concept of the O&M "tail" to each of the services and the differences in the services themselves.

2. The many discussions about military readiness in the news today are primarily centered on the O&M appropriations and how much readiness they really provide. Research quantifying levels of readiness produced by the O&M appropriation, using present measures of readiness utilized by the services, would be beneficial. The results of research of this nature could settle some of the debate around the issue, as well as serve to remove some of the political "guess work" involved in setting O&M funding levels. A good starting point

for research in this area would be the CBO Paper, *Trends in Selected Indicators of Military Readiness, 1980 Through 1993*, March 1994.

3. Research that investigates the level of fixed costs and the range where they remain fixed in the various programs within the O&M appropriations would be helpful. Decision makers, faced with increasingly difficult budget choices, need to know where reductions can be made without reducing the funding necessary to support operations and maintain readiness.

APPENDIX A

Appendix A is an excerpt from the Department of the Navy, FY 1995 Budget Estimates/Justification of Estimates, Operations and Maintenance, Navy, also known as the Exhibit OP-05.

In the OP-05, each Activity Group in the Operations and Maintenance appropriation has four main sections, titled: Description of Operations Financed; Force Structure Summary; Financial Summary; and, Performance Criteria. Shown are sample pages of these sections from the Servicewide Support Activity Group within Budget Activity Four.

Department of the Navy
Operation & Maintenance, Navy
FY 1995 Budget Estimates

Budget Activity: 04 - Administration and Servicewide Activities

Activity Group: Servicewide Support

I. Description of Operations Financed

This activity group provides resources for servicewide administrative activities and programs which manage and support the Department of the Navy operating forces. Programs included in Servicewide Support include administrative staffs and support organizations, the various military and civilian manpower and personnel management commands, personnel and base support programs, servicewide communications programs, public affairs programs, and payments to the Defense Finance and Accounting Service for finance and accounting services provided to the Department of the Navy.

Administration

The Secretary of the Navy staff serves as the principal policy advisors and assistants in the administration of the affairs of the Department of the Navy. The Chief of Naval Operations (OPNAV) staff advises and assists the Chief of Naval Operations in the discharge of his responsibilities as the principal naval advisor and naval executive to the Secretary of the Navy on the conduct of the activities of the Department of the Navy, and as the Navy member of the Joint Chiefs of Staff. The OPNAV Support Activity performs functions of an operational nature that support the Chief of Naval Operations Staff Offices.

The Naval Audit Service conducts internal audits of Navy and Marine Corps activities, programs, systems, and functions to determine whether planned and budgeted program results are being achieved and to assess compliance with the applicable laws and directives, determines whether programs are managed efficiently and economically, and whether financial statements are accurate and in compliance with the Chief Financial Officers Act of 1990.

The headquarters staff of the major systems commands manage programs and resources and provide technical direction concerning ship, aircraft, weapons systems, the related equipment and support systems, operating forces personnel, and facilities and bases. Finally, payments for financial and accounting services provided to the Navy by the Defense Finance and Accounting Service are included in this sub-activity group.

External Relations

Public affairs staffs are responsible for enhancing the awareness and support for the missions and operations

Budget Activity: 04 - Administration and Servicewide Activities

Activity Group: Servicewide Support (cont'd)

I. Description of Operations Financed (cont'd)

of the Department of the Navy among the general public, the media and members of Congress and other personnel support programs. Funding for the Flight Demonstration Team provides for the conduct of flight demonstrations and public appearances. Also funded are Congressional travel, Vice President's Residence Ground Support and personnel security research programs.

Civilian Manpower and Personnel Management

The Civilian Personnel Management Headquarters, Office of Civilian Personnel Management Regional Offices, and the Consolidated Civilian Personnel Offices are responsible for the execution and evaluation of the Navy's civilian personnel/equal employment opportunity policies and programs. The Naval Civilian Personnel Data System provides automated support to civilian personnel organizations. The Unemployment Compensation Fund provides resources to reimburse states for unemployment compensation paid to eligible former employees of the Department of the Navy.

Military Manpower & Personnel Management

The Navy Manpower Analysis Center (NAVMAC) develops manpower requirements documents for individual ships, aircraft squadrons and shore activities. The Enlisted Personnel Management Center (EPMAC) provides centralized management support for the distribution of active duty enlisted personnel. The Navy Personnel Evaluation Boards conduct hearings and present reports concerning errors and injustices involving members and former members of the military which the Secretary may use to correct military records. The boards also assist and advise the Secretary of the Navy on matters of policy, procedure and administration with regard to decorations and medals. Also funded are the operations of the Consolidated Brigs, operations of the Deserter Apprehension Program and the Corrections Management Information System (CORMIS) which integrates all requirements of the Navy Corrections Programs and enhances the Navy's ability to manage and operate corrections facilities.

Other Personnel Support

The Armed Forces Radio and Television Service (AFRTS) provides news, command information and entertainment programming aboard ship and overseas as part of the Navy's effort to enhance combat effectiveness and retention by improving morale. The Navy Imaging Command provides visual information products and services for Navy and other users worldwide. The Navy Broadcasting Service designs, procures, operates, and maintains production and broadcast systems and equipment for Navy operated AFRTS outlets worldwide. The Navy Internal Relations Activity plans and executes print media functions which provide two-way channels of communications between Navy policy makers and active duty personnel, dependents, reserves, retirees, and civilian employees.

The Legal Services Support Offices provide the Navy's senior-level officials with advice and counsel on issues such as environmental law, real estate, and base closure. The Navy Litigation Office supports the

Budget Activity: 04 - Administration and Servicewide Activities
Activity Group: Servicewide Support (cont'd)

I. Description of Operations Financed (cont'd)

joint Justice Department/Navy Department contract analysis and review effort concerning the pending A-12 contract termination case. The Legal Services Support Group handles all suspension and debarment actions against government contractors for the General Counsel. \Navy Legal Services Offices and detachments provide legal services and counsel concerning command legal matters including, but not limited to, military justice, conducting investigations, adjudicating claims, and providing legal assistance. The Judge Advocate General-Field offices provide legal support concerning military and administrative law.

The Board of Inspection and Survey (INSURV) conducts trials of newly constructed or older ships, service craft and aircraft to ensure that they are suitable for their intended purpose. The Naval Safety Center promotes and monitors safety to reduce the incidence of accidents afloat and ashore. The Naval Historical Center manages the collection, preservation, exhibition and distribution of objects and information of historical interest. The Historical Ships Program provides resources to maintain and display the USS Constitution and the ex-USS Nautilus.

The Subsistence in Kind Program provides for the testing of new food items and the replacement and rotation of rations provided to active duty enlisted personnel. The Retail Clothing Stores and Ships' Stores Afloat programs provide a convenient and reliable source from which authorized personnel may obtain government-procured articles of uniform clothing and related items and other articles for their health and comfort. Funding is also provided for various Human Resources Management Support systems, including the Navy Leadership Program, Equal Opportunity Program, Alcohol Rehabilitation Centers, Health and Physical Readiness Program, Family Advocacy Program and Family Service Centers and other personnel support programs.

Servicewide Communications

Funding provides for various communications systems which support both the fleet and shore establishments of the Navy. These systems include Electronic Command and Control systems which provide command, control, readiness, and intelligence information in direct support to the CINCs. In addition to communications systems, funding also provides for information security which is required to prevent access to classified material, the engineering and logistics support required to maintain those systems, and Fleet Ballistic Missile (FBM) Strategic Communications HF/VLF/LF broadcast subsystems. All leased communications costs, the operation of Communications Stations worldwide, and the management of both are also included in Servicewide Communications funding.

Base Support

Base support includes operation of utility systems, public works services, base administration, supply operations, base services such as transportation and security, personnel support functions, bachelor quarters operations, morale, welfare and recreation operations, real property maintenance, disability compensation, and environmental and hazardous waste management.

Budget Activity: 04 - Administration and Servicewide Activities
Activity Group: Servicewide Support (cont'd)

I. Description of Operations Financed (cont'd)

II. Force Structure Summary

Force structure supported includes eighteen staff offices for the the Secretary of the Navy, fifteen staff offices for the Chief of Naval Operations, and forty-five offices for the Naval Audit Service. Also supported are the personnel assigned to the headquarters staff of the Naval Sea Systems Command, including the Commander, Naval Sea Systems Command and his staff, the NAVSEA Comptroller's staff and the Human Resource Office-Crystal City, and personnel involved in environmental protection programs. Also supported are civilians at Naval Air Systems Command headquarters which provide managerial oversight and support to the Naval Aviation Systems Team, 9 Naval Aviation Warfare Centers, 6 Naval Aviation Depots, 3 Program Executive Offices, the Navy's Next Generation Strike Aircraft (AX) Direct Reporting Program Management office and 9 other field activities. Also supported are the Space and Naval Warfare Systems Command headquarters, the Naval Facilities Engineering Command headquarters and Naval Support Facility, Thurmont, Maryland. In addition, the public relations staffs of the Pacific Fleet, CINCPACFLT, the External Public Affairs and the Community Relations programs conducted by Commander, Naval Activities, UK, Commander, Sixth Fleet, Command, Fleet Air Mediterranean and the CINCUSNAVEUR Public Affairs office, the public affairs offices of the Atlantic Fleet, the Chief of Naval Education public affairs offices and the Navy Flight Demonstration Team are supported. Funding is provided for 4 Alcohol Rehabilitation Centers. Support is provided for various other legal, personnel management and administrative offices, including the Office of Civilian Personnel Management, the regional consolidated Civilian Personnel Offices, the Navy Manpower Analysis Center, the Enlisted Personnel Management Center, the Navy Personnel Evaluation Boards, Consolidated Brigs, the Armed Forces Radio and Television Service, Navy Legal Services Support Offices. Finally, support is provided for 6 Worldwide Military Command & Control System (WWMCCS) sites ashore and the Joint Task Force Commander afloat.

Budget Activity: 04 - Administration and Servicewide Activities
Activity Group: Servicewide Support (cont'd)

III. Financial Summary (\$ in Thousands)

A. Sub-Activity Group Breakout

	FY 1993		FY 1994		FY 1995
	<u>Actual</u>	<u>Budget Request</u>	<u>Appropriation</u>	<u>Current Estimate</u>	<u>Budget Request</u>
Administration	508,601	302,943	289,902	349,469	382,299
External Relations	19,529	20,298	20,292	18,491	18,241
Civilian Personnel & Personnel Management	70,961	48,833	49,132	51,963	55,571
Military Manpower & Personnel Management	130,064	127,315	125,656	131,239	143,406
Other Personnel Support	408,748	390,476	386,370	393,395	386,950
Servicewide Communications	287,627	265,367	230,170	199,364	216,189
Base Support	<u>302,469</u>	<u>294,565</u>	<u>286,827</u>	<u>261,142</u>	<u>291,873</u>
Anticipated Reprogramming to support Separation Pay (SIP) at Headquarters activities				-46,413	
Total	1,727,999	1,449,797	1,388,349	1,358,650	1,494,529

B. Reconciliation Summary

	<u>Change FY 1994/FY 1994</u>	<u>Change FY 1994/FY 1995</u>
Baseline Funding	1,449,797	1,358,650
Congressional	-61,448	6,000
Price Change	11,247	60,718
Functional Transfer	3,372	-8,134
Program Changes	-44,318	77,295
Current Estimate	1,358,650	1,494,529

Budget Activity: 04 - Administration and Servicewide Activities
Activity Group: Servicewide Support (cont'd)

C. Reconciliation of Increases and Decreases

\$ in 000

1. FY 1994 President's Budget Request		\$1,449,797
2. Congressional Adjustments		-61,448
1) Contracted Advisory and Assistance Service	-2,380	
2) Automated Data Processing	-2,888	
3) Pentagon Reservation Maintenance Fund	-3,200	
4) Servicewide Support	-9,132	
5) Ship Maintenance Backlog	312	
6) Long Haul Communications	-29,600	
7) O&M Purchases Threshold	6,000	
8) Naval Audit Service	-2,277	
9) Defense Finance and Accounting Service	-18,600	
10) Use of Natural Gas Technology	2,600	
11) General Provisions Sec. 8064(d)	-2,283	
3. FY 1994 Appropriated		\$1,388,349
4. Price Growth		11,247
A. Inflation Rate Change from 2.3 to 2.6 percent	1,676	
B. Locality/Comparability Pay Adjustment	9,571	
5. Functional Transfers		3,372
A. Transfer-In	3,868	
1) Intra-Appropriation	(3,868)	
a) Reflects the augmentation of Director of Naval Training to reflect the structure of the Joint Chiefs of Staff (+3E/S, +3W/Y).	126	
b) Reflects the transfer of Human Resource Office management functions from Fleet Ballistic Missile (+\$425K) and Acquisition and Program Management (+\$381K) to Civil Personnel Management (+13E/S, +13W/Y).	806	
c) Reflects transfer of funding from Air Operations Base Support (+46K), Ship Operations Base Support (+\$31K) and Combat Operations Support Forces (+\$49K) to support Morale, Welfare and Recreation programs in Military Personnel Management (+3E/S, +3W/Y).	126	
d) Reflects transfer of Activity Providing Telephone Service (APTS) funding for Bahrain, Sasebo, Atsugi, Keflavik,		

Budget Activity: 04 - Administration and Servicewide Activities
Activity Group: Servicewide Support (cont'd)

IV. Performance Criteria and Evaluation

Command and Administration

	<u>FY 1993</u>	<u>FY 1994</u>	<u>FY 1995</u>
Number of Programs Supported	169	122	122
Number of Field Activities Supported	81	56	54
Total Civilian Population Supported	39,359	23,193	22,592
Total Military Population Supported	2,532	1,834	1,834

Military Manpower Management

	<u>FY 1993</u>	<u>FY 1994</u>	<u>FY 1995</u>
<u>Military Personnel Served</u>			
Active Duty			
Officer	66,346	62,729	60,490
Enlisted	439,433	404,612	377,151

Civilian Manpower Management

	<u>FY 1993</u>	<u>FY 1994</u>	<u>FY 1995</u>
<u>OCPM Headquarters/HRO-CC</u>			
<u>Number of CivPers Supported</u>			
U.S. Direct Hire	271,318	253,947	230,952
<u>OCPM Regional Offices/HRO-CC</u>			
<u>Number of CivPers Supported</u>			
U.S. Direct Hire	271,318	253,947	230,952

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APPENDIX B

This Appendix is a summary of calculations made in creating Tables II through V.

NAVY PROGRAM	FY 92	FY 93	FY 94	FY 95
SIK				
Daily rate	1712.	1679.	1748.	1825.
x.47 on SIK				
x.66 at meals =	531.06	520.83	542.23	566.12
ADV IN RATE				
Cost/Participant	8.74	7.63	3.87	2.78
x.89 E1-E6 =	7.78	6.79	3.44	2.47
TUITION ASST				
Cost/Participant	561.24	552.58	668.30	740.51
x.083 Utilize	46.58	45.86	55.47	61.46
FUNCTIONAL SKILLS				
Cost/Participant	117.10	139.39	149.36	200.69
x Util rate	.034	.032	.033	.033
= rate/MY	3.98	4.46	4.93	6.62

VEAP				
Cost/Participant	921.59	669.33	733.05	732.45
x Util rate	.017	.014	.013	.011
= rate/MY	15.67	9.37	9.53	8.06
GENERAL TRAINING				
Cost/Manyear			14.31	13.72

MARINE CORPS PROGRAM	FY 92	FY 93	FY 94	FY 95
FMF SUPPORT				
rate/MY	1426.34	1464.81	1502.98	1545.00
SIK				
Daily rate	1616.95	1616.95	1657.10	1704.55
x.37 on SIK				
x.56 at meals =	335.03	335.03	343.35	353.18
FIELD RATIONS				
rate/enlisted MY	1193.92	594.28	1025.41	1131.43
x.37 on SIK				
x.63 FMF enlisted=	278.30	138.53	239.02	263.74
VOLUNTARY EDUCATION				
Cost/Participant	189.67	193.17	193.15	193.15
x Util rate	.27	.26	.29	.29
= rate/MY	51.21	50.22	56.01	56.01

VEAP				
Cost/Participant	1098.54	881.64	734.36	777.48
x Util rate	.018	.014	.013	.011
= rate/MY	19.77	12.34	9.55	8.55

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